# ORCHIDACEAE NOVAE MALAYENSES, XI.

Auctore

J. J. SMITH.

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**Habenaria damaiensis** J. J. S. n. sp.

*Caulis* validus, erectus, elongatus, pars adest c. 54 cm longa, inferne vaginas tubulosas acuminatas gerens, parte superiore 19 cm longa foliata. *Folia* c. 8, patentia, lanceolata, acute acuminata, cum mucrone filiformi, inferiora basi contracta superne paulo dilatata, superiora basi obtusa sessilia et subovata, summa amplexicaulia, nervis 3 majoribus, costa media dorso prominente, reticulato-venosa, sicco membranacea, c. 10—14.5 cm longa, 3.5 cm lata; vaginae tubulosae. *Inflorescentia* erecta, dense multiflora, pedunculo (parte adest) c. 11.5 cm longo, vaginulis foliaceis in bracteas vergentibus donato, rachide costata, c. 14 cm longa. *Bracteae* ovato-lanceolatae, acuminatae, acutissimae, concavae, nervis 3 dorso prominentibus, c. 1.8 cm longae, 0.525 cm latae. *Flores* mediocres. *Sepalum dorsale* ovatum, obtusum in aristam c. 0.5 cm longam productum, valde concavum, marginibus valde revolutis, nervis 3 dorso conspicue carinatis, c. 0.9 cm longum (arista exclusa), 0.46 cm latum. *Sepala lateralia* reflexa, oblique ovata, margine valde revoluto, obtuse acuminata, dorso infra apicem in aristam recurvam c. 0.6 cm longam producta, nervis 3 dorso valde prominentibus, c. 0.925 cm longa, 0.5 cm lata. *Petala* erecta, oblique linearia, subfalcatula, obtusa, basi antica abrupte breviterque dilatata, convexa, c. 0.775 cm longa, basi c. 0.175 cm, supra basin 0.075 cm lata. *Labellum* 3partitum, calcaratum, laciniis lateralibus patentissimis, anguste linearibus, anguste obtusis, falcatis, convexis, c. 0.55 cm longis, 0.05 cm latis, lacinia intermedia longiore, sigmoidea, lineari, apice leviter angustata, obtusa, convexa, c. 0.85 cm longa, 0.125 cm lata; calcar reversum, arcuato-recurvulum, a latere compressum, medio fauceque leviter ampliatum, apice anguste obtusum, c. 1.8 cm longum. *Gynostemium* erectum, c. 0.37 cm longum, auriculis majusculis verruculosis. *Anthera* rotundata, dorso convexa, thecis clavatis, c. 0.475 cm longis, canalibus divergentibus elongatis. *Rostelli* lobus intermedius erectus, triangulus, acutus, antherae medium fere attingens. Brachia rostelli deflexa, fauci calcaris adpressa, oblonga, convexa, canales aequantia, c. 0.175 cm longa. *Ovarium* 6sulcatum, papillosum, cum pedicello brevi torto c. 1.8 cm longo.

BORNEO: Soengai Damai (Exp. A. W. NIEUWENHUIS 1896—'97, JAHERI, n. 1338).

The nearest ally of this species is perhaps *H. trichaete* SCHLTR. from New-Guinea, from which it a.o. differs in the „canales antherae" being nearly as long as the stigmatic processes.

**Plocoglottis** (sect. Porphyrophyllos) **quadrifolia** J. J. S. n. sp.

*Rhizoma* crasse cylindricum, c. 0.85 cm diam., sub pseudobulbis crassius. *Pseudobulbi* erecti, 4folii, vaginis magnis tubulosis acuminatis superioribus accrescentibus ad c. 13 cm longis. *Folia* anguste elliptica ad elliptica, sensim acuminata, acutissima, setifera, basi in petiolum angustata, nervis 5—6 subtus carinatis, papyracea, c. 20—26.5 cm longa, 5.1—8.4 cm lata; petiolus brevis, late canaliculatus, 3costatus, c. 1.2—1.6 cm longus; vagina tubulosa, angulata, apice antice rotundato-excisa. *Flores* mediocres, asymmetrici, carnosuli, ex apice sepali dorsalis usque ad apicem sepalorum lateralium c. 2.3 cm longi, ad petala 2,9 cm lati, sepalis dorso puberulis cum petalis intus ad basin parce pilis brevibus crassiusculis hirtellis. *Sepalum dorsale* reflexum, apice revolutum, basi apiceque convexum, anguste oblongum, superne vix dilatatum, breviter acuminatum, anguste obtusum cum apiculo conico incurvo dorso ad apicem, 7nervium, superne inter nervos convexum, c. 1.85 cm longum, bene 0.6 cm latum. *Sepala lateralia* porrecta, apice valde et oblique recurva, convexa, latere exteriore superne concavo-excavata, oblique elliptica, falcata, apice triangulo-acuminata, acutiuscula, apiculata, basi contracta, 8nervia, c.1.35 cm longa, 0.8 cm, basi 0.3 cm lata. *Petala* patentissima, oblique lineari-lanceolata, supra basin utrinque paulo obtusangule dilatata, apicem versus sensim angustata, c. $^1/_4$ superiore lineari-contracta, brevissime apiculato-acuminata, nervis 5 intus leviter insculptis, carnosula, c.1.8—1.9 cm longa, 0.45 cm lata ad basin. *Labellum* inferne membranis obliquis gynostemio elastice adnatum, inexplanatum marginibus inferioribus oblique inflexis ambitu cuneato-sexangulum, supra convexum, subtus concavum, margine apicali cum appendice anguste recurvo truncatum, callis 2 remotis obliquis a latere compressis antice late subconicis obtusis postice decurrentibus intus inter marginem apicalem, explanatum ambitu transverse quadrangulum, apice truncatum cum appendice subulato-triangulo acuto in medio, parte incrassata mediana transverse quadrangula basi abrupte cuneato-angustata, margine apice excepto membranaceo basi lato superne angustiore, apice excepto omnino dense basi brevius superne longe fimbriatum, margine membranaceo inferne intus papilloso-villoso, inexplanatum c. 0.7 cm longum, 1 cm latum, explanatum c. 0.95 cm longum, 1.2 cm latum, appendice apicali 0.23 cm longo, fimbriis c. 0.15 cm longis. *Gynostemium* satis gracile, vix tortum, clavatum, trigonum, dorso convexum, glabrum, c. 1.1 cm longum, basi longitudine 0.26 cm gynostemio adnatum, clinandrio alte excavato denticulato, apice porrecto obtuso minute crenulato, auriculis triangulis acutis. *Anthera* conspicua basi in clinandrium quadrans, ambitu cordato-ovalis, basi bilobula, apice in appendicem latam semilunatam rotundatam margine incurvam eroso-fimbriatulamque utrinque in dentem

obtusum terminantem producta, c. 0.33 cm longa. Pollinia 4, oblique ovalia, cum caudiculis parallelis basi incrassatis apice incurvis c. 0.325 cm longa. *Rostellum* conspicuum, reflexum, late rotundatum, concavum, dorso convexum. *Stigma* suborbiculare, margine inferiore elevatum. *Ovarium* pedicellatum obtuse trigonum, 6sulcatum, pubescens, c.1.8 cm longum.

SUMATRA: West coast, Agam, Boekit Batoe Banting (W. GROENEVELDT, cult. sub n. 873).

Though the material sent by Mr. E. JACOBSON, Fort de Kock, is not wholly complete, I do not hesitate to describe this very distinct plant, an ally of *P. Lowii* RCHB. f. etc. It differs from these in the four-leaved pseudobulbs, the very conspicuously fimbriate lip, and the shape of column and anther.

„Pseudobulbs dark purple green; young leaves dark purple green above, dark greenish purple beneath, the old leaves darker green suffused with purple; peduncle dark purple; bracts yellowish purple; pedicel and ovary greenish light purple; dorsal sepal light ochraceous faintly tinged with wine-red; lateral sepals light ochraceous, the inner surface flushed with wine red; petals light ochraceous, the inner surface grained with wine red at the base; lip outside ochraceous dotted purple at the base, the apex purple, the fimbriated margin light ochraceous banded purple, inside light ochraceous, the basal half dotted purple, with a limon yellow stain in the centre, the apical half violet with the margin transparently yellowish white; column yellowish white, the apex light yellow, under surface dotted violet at the base; pollinia yellow". (E. JACOBSON)

Description from materials preserved in alcohol.

I take adventage of this opportunity by proposing a new section of the species grouping around *P. Lowii* RCHB. f. which may be characterized in this way.

Sect. **PORPHYROPHYLLOS.** Pseudobulbs more or less elongate conical, 1—more-leaved. Leaves usually purple at the back. Inflorescence close to the base of the pseudobulb, erect, elongate, many-flowered. Flowers somewhat torsal, asymmetric, the lip with fimbriate margins.

The section includes only a few species which, however, are spread over the whole Malay Archipelago and Peninsula and New-Guinea, viz. *P. Lowii* RCHB. F., *P. atroviridis* SCHLTR., *P. pubiflora* SCHLTR. and the above species. Whether *P. Lowii* is a sparse species or covers different species (e. g. *P. porphyrophylla* RIDL.) is as yet uncertain.

**Phajus** (sect. Euphajus) **klabatensis** J. J. S. n. sp.

*Pseudobulbi* c. 6folii. *Folia* petiolata, lanceolata, acuminata, nervis c. 7 subtus prominentibus nonnullis minoribus additis, c. 63 cm longa, 8 cm lata, petiolo canaliculato. *Inflorescentia* erecta, multiflora, sensim florens, pedunculo c. 31 cm longo. Bracteae caducae. *Flores* magni. *Sepalum dorsale* lanceolatum, apicem versus paulo dilatatum, obtusum, medio canaliculatum

cum lateribus convexis, basi apiceque concavum, c. 5.7 cm longum, 1.5 cm latum. *Sepala lateralia* oblique reflexa, oblique lanceolata, acuta, media canaliculata cum lateribus convexis, apice recurvulo canaliculata, costa media dorso incrassata, c. 5.85 cm longa, 1.43 cm lata. *Petala* oblique subspathulato-lanceolata, acuta, convexa, dorso sulco longitudinali costis humilibus convexis limitato, c. 5.4 cm longa, basi 0.4 cm, superne 1.1 cm lata. *Labellum* 3lobum, calcaratum, longitudine 1.3 cm gynostemio adnatum, inexplanatum oblique infundibuliforme, subtus costa longitudinali sulcata a calcari decurrente instructum, intus 2costatum, costis sulco separatis humilibus applanatis latis leviter convexis puberulis in medio laminae fere latissimis margine exteriore elevato erosulo-serrulatis in basi lobi intermedii in costam angustiorem apicem attengentem apice valde attenuatam verruculosam esulcatam confluentibus infra medium constrictis et basin versus decrescentibus, explanatum e basi unguiculata (parte gynostemio adnata) late cuneato-flabellato-dilatatum, totum c. 6.5 cm longum, 4.65 cm latum; lobi laterales erecti, gynostemium bene superantes, margine antico recurvi, undulati, minute crenulati, oblique semiovales, rotundati; lobus intermedius recurvus, convexus, undulatus, transverse oblongo-ovalis, brevius apiculato-acuminatus, apiculo recurvo, vel retusus cum apiculo minore in sinu irregulariter marginatus, lobos laterales non conspicue superans, c. 1.3 cm longus, 2.4 cm latus; calcar reversum, incurvum, tenue, apice ?, inexplanatum c. 1.5 cm longum. *Gynostemium* subsigmoideum, subclavatum, in utraque stigmatis parte rotundato-dilatatum, dorso applanatum, sectione transversa aequilateraliter trapeziforme, c. 3 cm, facie inferiore 3.45 cm longum, parte labello adnata c. 1.6 cm longa subtus canaliculata pubescensque, clinandrio alte excavato, semiorbiculari margine recurvo lobulato erosulo minute undulato. *Anthera* cucullata, e basi transverse subovali in rostrum conspicuum triangulum obtusum convexum producta, hirtella, c. 0.4 cm lata. Pollinia 8, lateraliter compressa, oblique cuneato-triangula. *Rostellum* e basi lata triangulo-acuminatum, acutum, convexum. *Stigma* obovatum. *Ovarium* 6sulcatum, apice obliquum, c. 2.2 cm longum, cum pedicello 1 cm longo clavatum.

SELEBES: Minahassa, Goenoeng Klabat, (J. BOESVELD, liv. pl. cult. in Hort. Bog.).

A most beautiful plant allied to *Ph. Tankarvilliae* BL. and especially, I think, to *Ph. trichoneurus* SCHLTR. from Central-Selebes. It differs from the latter in the much larger flowers, and especially in the form of the lip, which is provided with only two broad nearly flat keels separated by a furrow and confluent on the midlobe. A number of important data are missing in SCHLECHTER's description.

The description was drawn up after insufficient dry material with a very young inflorescence and two flowers preserved in alcohol. In both the tip of the spur was injured.

„Sepals and petals yellowish white outside, sepals brown inside with a narrow nearly white border and tip, petals inside a trifle more reddish especially towards the apex, tip white, lip at the base of the side-lobes

at both sides of the column with broad parallel dark purple more or less confluent streaks, side-lobes and base of midlobe then tinged yellowish bordered light purple with the extreme margin white, rest of midlobe white, keels white, between and under them striped yellow, column minutely dotted purple, anther whitish." (J. G. B. BEUMÉE)

**Calanthe** (sect. Eucalanthe) **moluccensis** J. J. S. n. sp.

*Pseudobulbi* approximati, parvi, foliorum vaginis obtecti, c. 3folii, basi paucivaginati. *Folia* elliptica acute acuminata, undulata, crispula, utrinque villosa, nervis 5 supra insculptis subtus prominentibus, tenuia, viridia, c. 22,5 cm. longa, 9,2 cm lata, basi in petiolum late canaliculatum angulatum pilosum dilute viridem cum vagina c. 7 cm longum contracta. *Inflorescentiae* axillares laxe multiflorae pedunculo tereti, villoso, dilute viridi, c. 29 cm longo, 0.3—0.37 cm diam., vaginulis c. 2—4 acutis basi tubulosis pubescentibus donato, rachide velutino-villosula, 15 cm et plus longa. Bracteae patentes, lanceolato-ovatae, acutae, dorso puberulae, 5nerviae, virides, basi pallidae c. 1.5 cm longae, 0.57 cm latae. *Flores* mediocres, violacei, marcescentes purpurascentes. *Sepalum dorsale* ellipticum, acutum, breviter apiculatum, basi angustum, c. 1.6 cm longum, 0.73 cm latum. *Sepala lateralia* oblongo-elliptica acuta cum apiculo canaliculato, basi angusta, costa media intus canaliculata dorso obtuse prominente, c. 1.8 cm longa, 0,7 cm lata. Sepala omnia intus glabra, dorso breviter pubescentia, intus e basi versus apicem intensius colorata. *Petala* cuneato-spathulato-obovata, apice breviter acute acuminata, basi angusta, utrinque glabra, costa media intus sulcata dorso prominente, intus e basi apicem versus intensius colorata, c. 1.3 cm longa, 0.7 cm lata. *Labellum* longitudine c. 0.3 cm gynostemio adnatum, 3lobum, calcaratum, callo postice bilobulo flavo antice in costam longitudinalem humilem verrucosam exeunte ad basin laminae, violaceum marcescens purpureum, ad lobos laterales c. 0.6 cm latum; lobi laterales minuti, patentissimi oblongi, obtusi, leviter convexi, fere 0.2 cm longi; lobus intermedius porrectus, conspicuus, cuneatus, apice leviter rotundato-truncatus repandulusque, sinu triangulo bilobulis, lobulis oblique quadrangulis leviter convexis, glaber, c. 1.35 cm longus et latus; calcar deorsum spectans, incurvulus, clavatus, dimidio superiore obtusangule recurvulo leviter a dorso compresso, obtuso, dorso longitudinaliter sulcatum, puberulum, violaceum, c. 2.3 cm longum, superne 0.25 cm latum. *Gynostemium* breve, labello adnatum, e basi contracta valde incrassatum, apice oblique truncato-cucullatum, 3lobulatum, lobis lateralibus magnis oblique rotundatis extus convexis intus concavis stigmaticis, lobulo intermedio (apice clinandrii) multo minore rotundato, glabrum, violaceum, c. 0.35 cm longum, clinandrio alte excavato. *Anthera* cucullata, brevissime cordata, alba. Pollinia 8, anguste clavata, nivea. *Rostellum* conspicuum, bifidum, laciniis acutis sinu oblongo rotundato separatis. *Ovarium* 6sulcatum, dilute viride, costis angustioribus violaceo-suffusum, cum pedicello 6sulcato violaceo puberulum.

AMBON: On the way to Mt. Latoea, in forest. (J.J. SMITH, July 1900, liv. pl.)

Very near *C. celebica* ROLFE but with the leaves longer hairy, the side-lobes of the lip narrower, the midlobe rather deeply lobed with the lobes quadrangular instead of rounded, and the spur longer.

Description from a living plant.

**Microstylis** (sect. Crepidium) **amabilis** J. J. S. n. sp.

*Caules* breves, incrassati, c. 2.5 cm longi, c. 5folii. *Folia* patentia oblique lanceolata, acuta, mucronulata, undulata, nervis 3 supra sulcatis subtus carinatis, supra vix violascenti-brunnea, fascia mediana longitudinali lata cinereo-argentea circiter $^1/_3$ latitudinem laminae occupante, dorso dilute cinereo-viridia, in nervis purpureo-suffusa, c. 9.5 cm longa, 2.2 cm lata; petiolus canaliculatus, purpureus, c. 2 cm longus, vagina brevi purpurea. *Inflorescentia* erecta, apice nutans, laxe multiflora, diu flores gignens, pedunculo quinquangulari-costato, nitide purpureo, c.12.5 cm longo, nonnullis vaginulis lineari-triangulis acutis concavis dorso carinatis purpureo-viridibus c. 0.65 cm longis donato, rachide angulata, sordide purpurea, c.17.5 cm longa. Bracteae reflexae, lineari-triangulae, acutae, purpureo-virides, c. 0.45 cm longae. *Flores* succedanei, pulchre dilute virides, subsemipellucidi, c. 0.57 cm lati, 0.67 cm longi, per paucos dies viriditatem conservantes. *Sepalum dorsale* deorsum spectans, oblongum, obtusum, marginibus recurvis valde convexum, c. 0.35 cm longum, 0.13 cm latum. *Sepala lateralia* subdivaricata, oblique ovata, obtusa, marginibus recurvis valde convexa, c. 0.25 cm longa, 0.2 cm lata. *Petala* divergentia, angulum rectum facientia, lanceolata, obtusa, valde convexa, c. 0.3 cm longa, 0.075 cm lata. *Labellum* subplanum, hippocrepidiforme, ambitu ovale, $^2/_5$ partibus superioribus utrinque dentatum, c. 0.4 cm longum, 0.35 cm latum, fovea alte excavata, margine carnosulo-incrassata, lobo intermedio breviter semiovali apice bidentato cum dentibus breviter falcato-triangulis leviter tegentibus, dentibus 3—4 falcatulo-incurvulis breviter triangulis exterius decrescentibus in utraque parte lobi intermedii, auriculis parallelis oblique triangulis obtusis. *Gynostemium* breve, a dorso compressum, dilute viride, auriculis antheram vix superantibus obtusis. *Anthera* plano-cucullata, transverse ovalis, flavescenti-alba. Pollinia parva, semipellucide flava. *Rostellum* membranaceum retusum. *Ovarium* cum pedicello angulum obtusum faciens, 6costatum, sordide purpureum, 0.7 cm longum.

BORNEO: In the centre, Liang Karing. (Exp. A. W. NIEUWENHUIS 1899, SAKERAN liv. pl. cult. in Hort. Bog. sub n. 1944).

According to the description apparently near *M. elegans* RIDL. but with much longer leaves, ovate lateral sepals, a distinctly dentate lip with blunt auricles.

Description from a cultivated specimen.

**Microstylis** (sect. Crepidium) **Toxopei** J. J. S. n. sp.

*Caules* approximati, erecti, carnosi, sectione transversa elliptici, apicem versus attenuati, virides, paucinodi, c. 5.5 cm longi, inferne 3vaginati, superne 3foliati, vaginis sensim in folia vergentia. *Folia* leviter oblique ovata ad oblongo-

ovata, sensim acuminata, undulata, nervis 5—6 supra sulcatis subtus prominentibus, herbacea, nitide viridia, ad c. 9 cm longa, 4.5—5 cm lata; petiolus latus valde canaliculatus, quinquangulatus, sensim in vaginam vergens, cum vagina 2.2—3.5 cm longus. *Inflorescentia* erecta, multiflora, diu flores gignens, pedunculo angulato, viridi, c. 6 cm longo, medio vaginula bracteiformi reflexa donato, rachide pedunculo simili, apice obtusangule nutante. Bracteae reflexae, subulatae, 1nerviae, pallide virides, ad c. 0.63 cm longae, superiores minores. *Flores* parvi, quaquaversi, ochracei, sepalis petalisque virescenti-suffusis, c. 0.38 cm lati, 0.5 cm longi. *Sepalum dorsale* oblongo-ovatum, obtusum, valde convexum, 3nervium, c. 0.26 cm longum, 0.14 cm latum. *Sepala lateralia* divergentia, recurva, oblique ovata, obtusa, convexa, apice rotundato-excavata, basi leviter concava, 3nervia, c. 0.22 cm longa, 0.16 cm lata. *Petala* reflexa, anguste oblonga, obtusa, vix retusa, valde convexa, 1nervia, c. 0.22 cm longa, 0.07 cm lata. *Labellum* hippocrepidiforme nectario subovato excavato margine omnino conspicue convexo incrassato antice ad basin lobi intermedii trilobulato ambitu toto obverse quinquangulari, basi lamella conspicua transversa triangula gynostemio adpressa donatum, explanatum c. 0.2 cm cum auriculis 0.3 cm longum, 0.3 cm latum, lobo intermedio laterales bene superante, incurvulo, semiovali, 2dentato cum dentibus acutis fere contiguis, c. 0.075 cm longo, 0.125 cm lato, lobis lateralibus latis e dente unico (vel 2) extrorso triangulo acuto et lobulo rotundato aequilongo, auriculis remotis, triangulis obtusis c. 0.08 cm longis. *Gynostemium* cum ovario angulum obtusum faciens, a dorso compressum, apice paulum dilatatum, dorso convexum, virescenti-ochraceum, c. 0.2 cm longum, auriculis obtusis antheram vix superantibus, clinandrio transverse ovali. *Anthera* plana, transverse ovali-ovata, obtusissima, ochracea, albo-marginata, c. 0.05 cm lata. Pollinia 4, a dorso compressa, in corpuscula 2 oblique obovata unita, supra convexa, pallide flavescentia, c. 0.04 cm longa. *Rostellum* membraniforme, truncatum, album. *Stigma* transverse ovale. *Ovarium* pedicellatum, obtusangule curvatum, 6costatum, dilute viride, c. 0.27cm longum.

BOEROE: Without locality. (L. J. TOXOPEUS n. 146, liv. pl. cult. in Hort. Bog.)

The label of this plant bears the above information. It belongs to one of two shipments which arrived nearly at the same time in Buitenzorg, the one sent by Mr. L. J. TOXOPEUS from Boeroe, the other by Dr. Hj. JENSEN from Ambon. In this way the plants were more or less confounded so that the said information is not wholly reliable.

The species is characterized a.o. by the rounded side-lobes with a single triangular tooth each.

Description from a cultivated specimen.

**Hippeophyllum halmaherense** J. J. S. n. sp.

*Rhizoma* repens. *Caules* c. 1.2—1.5 cm dissiti, breves, c. 5folii. *Folia* linearia, subfalcatula, acuta, articulata, c. 13 cm longa, sicco ad 0.45 cm

lata; vaginae compressae, conduplicatae, c. 1.7—2 cm longae, 0.5—0.6 cm latae. *Inflorescentia* elongata, valde multiflora, laxiuscula, pedundulo c. 2—2.5 cm longo, rachide ad c. 25 cm longa. Bracteae oblongae, obtusae, concavae, ciliatae, c. 0.2 cm longae. *Flores* parvi. *Sepalum dorsale* reflexum, oblongum, acutum, convexum, 1nervium, c. 0.14 cm longum, 0.04 cm latum. *Sepala lateralia* oblique oblonga, obtusa, convexa, 1nervia, c. 0.13 cm longa, 0.04 cm lata. *Petala* oblique linearia, vix spathulata, $^2/_5$ partibus superioribus incurvula, obtusa, c. 0.125 cm longa. *Labellum* gynostemio parallelum, porrectum, concavum, 3lobum, 3nervium, explanatum ambitu quinquangulare, c. 0.125 cm longum; lobi laterales porrecti, verticales, gynostemium sine anthera superantes, trianguli, acuti; lobus intermedius multo major, decurvus, e basi suborbiculari conspicue subulato-acuminatus, c. 0.05 cm longus. *Gynostemium* subrectum, dorso convexum, absque anthera c. 0.06 cm longum. *Ovarium* hirtello-puberulum, c. 0.04 cm longum; pedicellus minute papilloso-puberulus, c. 0.2 cm longus.

HALMAHERA. (J. E. TEYSMANN)

In the shape of the lip this species is similar to *H. javanicum* J. J. S. and *H. celebicum* SCHLTR. but differs among other characters in the subulate acuminate midlobe of the lip.

Description from herbarium.

**Hippeophyllum sulense** J. J. S. n. sp.

*Rhizoma* elongatum, repens, ramosum, radicans, vaginis tubulosis obtusis. *Caules* c. 3—4.5 cm dissiti, brevissimi, erecti, c. 4—5folii, nonnullis vaginis ad basin. *Folia* erecta, articulata, a latere compressa, linearia, plerumque leviter falcatulo-incurva, apicem versus sensim angustata, acuta, basi supra vaginato-fissa, carnosa, valde inaequimagna, medianum maximum c. 17—21 cm longum, sicco 0.75—1 cm latum; vaginae sese amplectentes, tubulosae, verosimiliter antice basi excepta rumpentes, c. 2—2.5 cm longae. *Inflorescentia* folia longe superans, valde multiflora, subdensa, cylindrica, sicco c. 0.8—0.85 cm diam., pedunculo c. 3—4.5 cm longo, nonnullis vaginulis subadpressis bracteiformibus concavis acutis ciliatis donato, rachide c. 30—34 cm longa, sicco longitudinaliter sulcata, minute puberula. Bracteae oblongo-ovales, obtusae vel subacutae, concavae, ciliolatae, c. 0.2 cm longae, 0.1 cm latae. *Flores* parvi, plus minusve verticillati, superiores plus minusve solitarii, patentissimi. *Sepalum dorsale* patentissimum, oblongum, obtusum, convexum, c. 0.16 cm longum, 0.07 cm latum. *Sepala lateralia* recurva, oblique subovato-obtusa, convexa, c. 0.15 cm longa, 0.075 cm lata. *Petala* patentia, recta, sublinearia, apice vix dilatata, obtusa, leviter convexa, 1nervia, c. 0.15 cm longa, 0.04 cm lata. *Labellum* gynostemio parallelum porrectum, 3lobum, concavum, subtus convexum, 3nervium, basi callis 2 parvis donatum, explanatum ambitu quinquangulare, c. 0.13 cm usque ad apicem loborum lateralium 0.08 cm longum, 0.08 cm latum, hypochylio cum lobis lateralibus ambitu quadrato; lobi laterales parvi, porrecti, erecti, apice recurvuli, oblique subrotundato-quadranguli, obtusi, gynoste-

mium sine anthera vix superantes; lobus intermedius multo major, recurvus, late ovato-rhombeus, apice sensim angustatus, subobtusus vel subacutus, c. 0.075 cm longus et latus. *Gynostemium* vix curvulum, apice truncatum, dorso convexum, cum anthera c. 0.1 cm, absque anthera 0.075 cm longum, clinandrio transverse ovali concavo. *Anthera* cucullata, orbiculari-quadratum, c. 0.03 cm lata, thecis dimidium inferius occupantibus. Pollinia 4, in corpuscula 2 oblique subobovato-ovalia unita. *Stigma* parvum. *Ovarium* hirtellum, c. 0.05 cm longum; pedicellus minute puberulus, c. 0.275 cm longus.

SOELA-ISLANDS: Taliaboe, Tandjong Saloe (Exp. P. VAN HULSTIJN, ATJE n. 112; „fl. yellow").

Near *H. alboviride* J. J. S. and *H. biakense* J. J. S. but with fewer much larger leaves and longer spikes, the midlobe of the lip not acuminate, the anther nearly orbicular.

Description from herbarium.

**Appendicula** (sect. Chaunodesme) **purpureifolia** J. J. S. n. sp.

*Caules* elongati, pars adest 51 cm longa simplex, internodiis ad c. 1.3 cm longis. *Folia* patentia, oblongo-elliptica, obtusa, breviter subaequaliter biloba cum mucrone multo longiore interposito, apicem versus subirregulariter marginata, basi vix angustata semitorta semiamplexicaulia, c. 4.6—4.8 cm longa, 1.6 cm lata; vaginae internodia superantes, tubulosae, apice truncatae antice leviter excisae. *Inflorescentiae* terminales et laterales e nodis caulium defoliatorum, patentes vel patentissimae, folia bene superantes, laxius multiflorae, diu flores gignentes, pedunculo c. 2.5 cm longo, nonnullis vaginulis foliaceis laxe adpressis lanceolatis acute acuminatis ad c. 0.8 cm longis in bracteas vergentibus donato, rachide angulata, 4 cm superante, internodiis c. 0.15—0.175 cm longis. Bracteae patentissimae, infimae reflexae, ovatae, acutae, concavae, 5nerviae, nervis exterioribus approximatis, ad c. 0.53 cm longae, 0.27 cm latae, superiores decrescentes. *Flores* parvi, quaquaversi, c. 0.45 cm longe, 0.37 cm lati. *Sepalum dorsale* cum ovario angulum obtusum faciens, ovatum, obtusum, concavum, 1—sub3nervium, c. 0.25 cm longum, 0.175 cm latum. *Sepala lateralia* cum pede gynostemii mentum conspicuum latum cum ovario angulum acutum faciens rotundato-obtusangule incurvum late subangulato-rotundatum c. 0.2 cm longum formantia, patentia, margine antico omnino libera, oblique late triangula, obtusa, basi rotundata, concava, 3nervia, c. 0.25 cm longa, margine antico 0.4 cm, basi 0.3 cm metientia. *Petala* oblique patentia, superne marginibus incurvulis concava, oblique oblongo-obovato-rhombea, obtusa, 1nervia, fere 0.25 cm longa, 0.17 cm lata. *Labellum* apici pedis gynostemii insertum, liberum, erectum, in $^2/_5$ partibus supra basin obtusangule recurvum, apice recurvum, marginibus supra basin valde canaliculato-incurvis inexplanatum spathulatum, marginibus superne recurvis laxe undulatum, 3nervium, nervis exterioribus basi furcatis, ungue concavo, appendice hippocrepidiformi concavo alto ungue breviore angustioreque cruribus decumbentibus valde dilatatis ca-

nalicula lata sejunctis fere usque ad apicem in laminam decurrente, lamina transverse quadrangula apicem versus paulo dilatata, apice latissimo 3lobulata, lobulis exteriobus latis rotundatis lobulo intermedio minuto aequilongo triangulo obtuso callifero, inexplanatum c. 0.325 cm longum, explanatum ambitu subovale, basi rotundatum, apice late rotundato-truncatum trilobulumque, c. 0.34 cm longum, 0.24 latum. *Gynostemium* breve, dorso convexum, c. 0.175 cm longum, clinandrio cum gynostemio angulum obtusum faciente, excavato, apice late triangulo obtuso concavo, auriculis triangulis apice dentiformibus. *Anthera* cucullata, brevis, cordata, apice lato aequaliter breviter obtuse 3dentata, connectivo basi gibboso-incrassato, c. 0.07 cm lata, fere 0.1 cm longa. Pollinia 6, inaequalia, compressa, oblique oblongo-obovata ad cuneato-obovata, basi acuta, apice obtusa partim curvula, c. 0.05 cm longa, stipitibus 2 liberis spathulatis basi filiformi parallelis $^3/_5$ partibus superioribus dilatatis concavis divergentibus c. 0.06 cm longis, glandula parva. *Rostellum* elongatum, triangulum, in lacinias 2 subulatas acuminatum. *Stigma* semiorbiculare. Pes gynostemii cum ovario angulum acutum faciens, incurvus, lineari-oblongus, truncatus, concavus fascia longitudinali convexa infra stigma, bene 0.2 cm longus. *Ovarium* 6sulcatum, pedicellatum, c. 0.4 cm longum.

BORNEO: Westerafdeeling, Boekit Tiloeng, 100 m. (P. M. W. DAKKUS, 1924, liv. pl., cult. in Hort. Bog. sub n. 340)

A species of the section *Chaunodesme* with small flowers, a broad lip, short anther three-dentate at the apex, and the pollinia attached to two distinct stipites.

„Young leaves tinged dark purple, older ones green, spikes pendulous, sepals greenish in the centre and especially towards the top dark purple, petals light green bordered very dark purple except the base, lip yellowish green, base yellow, flat margins and top purple, column except the yellowish green base, and anther dark purple". (J. G. B. BEUMÉE)

Description from herbarium and flowers preserved in alcohol.

**Appendicula** (sect. Chaunodesme) **Dajakorum** J. J. S. n. sp.

*Caules* approximati, plerumque simplices, adulti interdum pauciramosi, c. 15—33 cm longi, internodiis c. 0.35—0.6 cm longis. *Folia* patentia, lanceolata ad oblongo-subelliptica, apice angustata, obtusa vel subretusa cum mucrone longiore, basi semitorta, c. 1.5—3.25 cm longa, 0.4—1 cm lata; vaginae tubulosae, internodia superantes. *Inflorescentiae* terminales et e nodis superioribus elongatae, simplices vel interdum ramosae, laxe multiforae, ad c. 12 cm longae, pedunculo tenui, c. 1.5—5 cm longo, vaginulis subadpressis donato, rachide tenui, leviter quaquaverse flexuosa. Bracteae reflexae apice incurvae, oblongo-ovatae, concavae, sicco manifeste nervosae, sicco c. 0.2—0.3 cm longae. *Flores* quaquaversi, c. 0.7 cm longi. *Sepalum dorsale* ovatum, obtusiusculum, concavum, c. 0.35 cm longum, 0.17 cm latum. *Sepala lateralia* lacinia oblique oblonga ad pedem gynostemii decurrentia, mentum oblongum c. 0.35 cm longum formantia, oblique triangula, acuta, 3nervia, c. 0375 cm

longa, basi 0.5 cm metientia. *Petala* oblique oblongo-elliptica, anguste obtusa, basi angustata oblique decurrentia, c. 0.35 cm longa, 0.14 cm lata. *Labellum* unguiculatum, 3lobum, appendice basilari recurva unguem aequante lata rotundata concava marginibus antice in lamellas 2 longitudiales decumbentes latas apicem fere attingentes producta, oblongum explanatum medio fere utrinque in lobum lateralem rotundato-triangulum dilatatum, ambitu oblongo-ellipticum, c. 0.6 cm longum, ad lobos laterales 0.3 cm latum, lobo intermedio conspicuo oblongo-quadrangulo, obtuso (retuso?, in alabastro obtuso cum callo apicali), c. 0.24 cm longo, 0.17 cm lato. *Gynostemium* usque ad apicem rostelli c. 0.2 cm longum, basi contractum, apice late triangulo. *Anthera* cordata, acuta, connectivo basi gibboso, bene 0.1 cm longa. *Rostellum* triangulum bidentatum. Pes gynostemii cum ovario angulum acutum faciens, oblongus, apice incurvus, c. 0.35 cm longus. *Ovarium* pedicellatum c. 0.375 cm longum.

BORNEO: Westerafdeeling, Amai Ambit, epiphytical. (H. HALLIER nrs. 3212 and 3197, 1893—'94). Liang Gagang. (H. HALLIER n. 2808, 1893—'94). Damoes (H. HALLIER n. 622, 1893—'94).

Though the material is not so very good, I describe this species as the elongate three-lobed lip with its long midlobe characterizes it sufficiently.

*A. rupicola* (RIDL.) ROLFE is irrecognizable from the description.

Description from herbarium.

**Bromheadia ensifolia** J. J. S. n. sp.

*Caules* approximati, elongati, tenues, rigidi, duri, laxissime serpentini, sectione transversa elliptici, nitidi, c. 55 cm longi, basi vaginis tubulosis obtusis nitidis tecti ceterum c. 8folii, internodiis c. 5—6 cm longis, 0.3 cm latis, radicibus crassis. *Folia* elongata, erecto-patentia, recurva, a latere compressa, angusta, lineari-ensiformia, uno latere concava cum marginibus satis latis, altero latere plana, margine superiore et inferiore obtusa, apice subacuta, basi valde obliqua, rigide coriacea, nitida, c. 44—50 cm longa, ultimum 21 cm longum, c. 0.35—0.37 cm lata; vaginae internodia subaequantes, tubulosae, sectione transversa ellipticae, apice antice acute triangulo-excisae et nigromarginatae (in spiritu vini), c. 0.33—0.35 cm latae. *Inflorescentia* terminalis, brevissima, ramosa, rachide compressa, flexuosa, c. 1.75 cm longa, internodiis c. 0.15—0.2 cm longis. Bracteae alternatim bifariae, late triangulae, conduplicatae, rachidem amplectentes, bene 0.2 cm longae. *Flores* inter minores. *Sepalum dorsale* lanceolato-oblongum, obtusum cum apiculo reverso acute conico dorso ad apicem, concavum, 9nervium, c. 1.75 cm longum, 0.5 cm latum. *Sepala lateralia* oblique lanceolato-oblonga, obtusa cum apiculo acute conico, concava, 7nervia, nervis exterioribus supra basin bifurcatis, c. 1.8 cm longa, 0.5 cm lata. *Petala* oblique lanceolato-oblonga, obtusa, concava, basi 3nervia, c. 1.7 cm longa, fere 0.5 cm lata. *Labellum* gynostemio adpressum et paulo longius, 3lobum, subtus leviter concavum, intus loborum lateralium parte libera et lobi intermedii margine exceptis papilloso-

puberulum, fascia longitudinali convexa pubescenti superne distinctiore ad basin lobi intermedia subabrupte obtuse terminante, multinervium, explanatum ambitu ovali-oblongum, c. 1.55 cm usque ad apicem loborum lateralium 1.2 cm longum, 0.9 cm latum; lobi laterales gynostemio breviores porrecti, parte libera oblique triangula, obtusa, c. 0.25 cm longa; lobus intermedius porrectus, quadrangulus cum lateribus obtusangule rotundatis, apice truncatus trilobulatusque, lobulo intermedio late triangulo, margine lato tenui undulato crenulato, incrassatione conspicua quadrangula apicem versus angustata bene infra apicem abrupte truncato-terminante verrucoso-rugoso basi tricostata apice valde incrassata verrucosaque. *Gynostemium* vix curvulum, dorso convexum, subtus concavum, c. 1.3 cm longum, clinandrio concavo apice late truncato vix retuso marginibus repandulo. *Anthera* late cucullata, apice alte bifida, lobulis divergentibus ovalibus, c. 0.27 cm late. Pollinia 2, conspicua oblique subovoidea, basi oblique truncata cum excavatione, valde oblique fissa, c. 0.17 cm longa. *Rostellum* breve, recurvum, late bilobulum. *Stigma* rotundato-quadratum. *Ovarium* pedicellatum teres, 6sulcatum, c. 1.85 cm longum.

SUMATRA: West coast, distr. Sidjoendjoeng, Boekit Pakano. (A. V. THEUNISSEN, cult. in horto E. JACOBSON, Fort de Kock, sub n. 1629, June 1918).

Allied to *B. pungens* RIDL. and *B. aporoides* RIDL. but differing in the much longer stems and leaves and the characteristics of the flowers.

„Pedicel very light green: ovary greenish white. Flowers pale yellow; lip in the centre purple powdery; side lobes veined purple inside, midlobe edged white, with two longitudinal purple streaks. Column very faintly tinted purple inside". (E. JABOBSON)

Description from material preserved in alcohol.

**Eria** (sect. Hymeneria) **bengkulensis** J. J. S. n. sp.

*Rhizoma* ramosum, cylindricum, carnosum. *Caules* satis distantes, cylindrici, carnosi, rhizomate aequicrassi, c. 10 cm longi, vaginis mox membranaceis fatiscentibusque, apice bifolii. *Folia* lanceolata, acuminata, basi breviter canaliculato-petiolato-contracta, nervis c. 11—13 sicco supra subtusque prominentibus, papyracea, c. 11—12.25 cm longa, 2.9—2.7 cm lata. *Inflorescentiae* e nodis superioribus, laxe c. 8—9florae, foliis breviores, pedunculo brevi, nonnullis vaginulis bracteiformibus donato, rachide pubescente cum pedunculo c. 5.5—6.25 cm longa. Bracteae magnae, patentissimae, ellipticae ad oblongo-ellipticae, ad c. 1.5 cm longae. *Flores* mediocres. *Sepalum dorsale* lineari-lanceolatum, anguste obtusum, 3nervium, c. 1.2 cm longum, 0.35 cm latum. *Sepala lateralia* oblique elongato-triangula, subfalcatula, acutiuscula, c. 1.1 cm longa, basi 0.5 cm lata. *Petala* oblique lanceolata, sensim acuminata, acuta, 3nervia, bene 1 cm longa, 0.26 cm lata. *Labellum* recurvum, 3lobum, 3nervium, nervis exterioribus ramosis, costis 3 basin non attingentibus, simplicibus, costis exterioribus basin lobi intermedii non attingentibus in flexu altioribus apice breviter contractis obtusisque, costa intermedia

lateralibus longiore in flexu labelli non altiore infra apicem interrupta, explanatum ambitu late cuneato-obovatum, c. 0.95 cm, usque ad lobos laterales 0.8 cm longum, ad lobos laterales 0.85 cm latum; lobi laterales erecti, oblique trianguli, subfalcatuli, apice breviter contracti, obtusi; lobus intermedius conspicuus, latus, transverse ovato-ovalis, rotundatus, basi excepta verrucoso-incrassatulus, parte incrassata reniformi, c. 0.42 cm longus, 0.6 cm latus. *Gynostemium* c. 0.4 cm longum, clinandrio excavato pariete postico subsemiorbiculari apiculato. *Anthera* cucullata, explanata transverse quadrangula, basi 2-subquadrilobulata, apice truncata, connectivo late incrassato apice in rostrum obtusum producto, c. 0.18 cm lata. *Stigma* conspicuum, suborbiculare. Pes gynostemii lineari-oblongus, truncatus, dimidio superiore convexo-pulvinatus cum costulis 4 longitudinalibus, c. 0.3 cm longus. *Ovarium* pedicellatum, 6sulcatum, atrofusce stellato-hirtellum c. 1.3 cm longum.

SUMATRA: Bengkoeloe, Wai Tenoeng, above Kroei, c. 1000 m. (A. BOUMAN-HOUTMAN n. 8, Februari 1924).

This differs from *E. mentaweiensis* J. J. S. in the shorter pseudobulbs with two leaves, shorter fewer-flowered spikes, narrower dorsal sepal, larger hardly falcate lateral lobes of the lip, differently shaped keels, narrower midlobe.

According to a coloured drawing the bracts are dull green, the sepals and petals pale greenish, the discus and side lobes red with the anterior margin white, the midlobe light orange.

Description from a dried specimen.

**Eria** (sect. Trichotosia) **poculata** RIDL. in Journ.Linn.Soc. XXXII (1896), 305; Mat. I (1907), 94 — *E. conifera* J. J.S. in Bull. Dep. Ind. Neerl. XXII (1909), 27 — *Trichotosia poculata* KRZL. in Pflanzenr. IV. 50. II. B. 21 (1911),142; RIDL. Fl.Mal.Penins.IV (1924),103.

*E. conifera* J. J. S. belongs here, according to specimens of RIDLEY'S species received in Buitenzorg from the Botanic Gardens, Singapore.

**Eria** (sect. Trichotosia) **buruensis** J. J. S. n. sp.

*Caules* elongati, teretes, adpresse ferruginee hirsuti, partes adsunt ad c. 35 cm longae, internodiis ad c. 2—7 cm longis, superioribus decrescentibus. *Folia* patentia, anguste oblique lanceolata, apicem versus oblique angustata, anguste obtusa, utrinque hirsuta, supra plus minusve glabrescentia, marginibus sicco valde revoluta, sicco coriacea, ad c. 9—10 c.m longa, 1.5 cm late, superiora decrescentia; vaginae tubulosae. *Inflorescentiae* vaginas perforantes, breves, dense pluriflorae, pedunculo brevissimo, hirsuto, c. 0.55—0.7 cm longo, vaginula breviter tubulosa valde inflato-concava obtusa c. 0.55—0.7 cm longa ad basin, rachide quaquaverse flexuosa, hirsuta, c. 1.5—2 cm longa. Bracteae quaquaversae, patentissimae, e basi orbiculari-ovata longius triangulo-acuminatae, valde concavae, dorso rufescenti-hirsutae, purpureae, apice pallidiores, ad bene 1 cm longae, 0.57 cm latae, infima sequentes brevior

latior et obtusior. *Flores* patentissimi, minusculi, c. 0.875 cm longi, sepalis basi breviter connatis dorso longe sublaxe patenter rufescenti-hirsutis carnosulis petalisque conniventibus apice recurvulis, purpureis apice albis. *Sepalum dorsale* horizontale, oblongo-triangulum, sensim angustatum, obtusum, breviter obtuse apiculatum, leviter concavum, 3nervium, c. 0.63 cm longum, 0.275 cm latum. *Sepala lateralia* cum pede gynostemii mentum deorsum spectans, cum ovario angulum acutum faciens superne obtusangule incurvum oblongum subteres obtusum c. 0.4 cm longum formantia, porrecta, parallela, falcato-triangula, apicem versus angustata, obtusa, longe obtuse crassiuscule subulato-apiculata, basi antica in laciniam oblique oblongam concavum ad pedem gynostemii decurrentem dilatata, concava, 3nervia, c. 0.7 cm longa, basi 0.525 cm, supra basin 0.3 cm lata. *Petala* oblique lineari-lanceolata, apice angustata, anguste obtusa, glabra, leviter concava, 2nervia, c. 0.54 cm longa, c. 0.125 cm. lata. *Labellum* basi sigmoidea erectum, supra basin obtusangule recurvum, infra medium subrectangule recurvum, angustum, canaliculatum, subtus convexum cum sulco inconspicuo in parte mediana et costa leviter prominula prope apicem, marginibus infra medium basi excepta anguste revolutis, glabrum, 3nervium, purpureum, apice margineque album, inexplanatum c. 0.475 cm longum, explanatum subsimplex, spathulatum, carnosulum, totum c. 0.74 cm longum, ungue oblongo, c. 0.32 cm longo, 0.15 cm lato, lamina ovata, $^1/_4$ parte apicali utrinque leviter rotundato-dilatata, apice subtruncato-rotundata cum lobulo parvo obtuso concavo, c. 0.4 cm longa, fere 0.3 cm lata. *Gynostemium* dorso convexo curvulum, a dorso compressum, supra visum orbiculari-ovatum, apicem versus paululum angustatum, glabrum, c. 0.26 cm longum, bene 0.2 cm latum, clinandrio alte excavato, apice incurvulo triangulo obtuso, auriculis conspicuis triangulis obtusis extus convexis intus concavis. *Anthera* cucullata, transverse quadrangula, apice brevissime obtuse apiculata, lobulis 2 parvis rotundatis ad basin, parte mediana (margine tenui tantum excepto) convexo-incrassata, connectivo longitudinaliter costato-incrassato ante antherae apicem terminante, atropurpurea, apice albide c. 0.125 cm lata. Pollinia 8, compressa, oblique subovalia ad cuneato-triangula cum caudicula lata c. 0.13 cm longa. *Stigma* magnum, gynostemii faciei inferioris magnam partem occupans, transversum, obverse reniforme. Pes gynostemii cum ovario angulum acutum faciens, rectus, apice tantum obtusangule fere rectangule incurvus, linearis, marginibus costaque intermedia prominulis, apice concavus, truncatus, c, 0.34 cm longus. *Ovarium* vix curvulum, crassiusculum, 6sulcatum, erecto-patenter hirsutum, c. 0.5 cm longum.

BOEROE: (L. J. TOXOPEUS, 1922, liv. pl. cult. in Hort. Bog. sub n. 119).

This has the short inflorescences of *E. annulata* LNDL. and *E. poculata* RIDL. but in other respects it is totally different.

Description from herbarium and inflorescences preserved in alcohol, the colour from fresh flowers.

**Eria** (sect. Cylindrolobus) **aporoides** LNDL. in Journ. Linn. Soc. III (1859), 60 — *Dendrobium aporoides* MERR. Sp. Blancoanae (1918), 113; etc.

This species has lately been removed, unfortunately, by F. KRÄNZLIN, E. D. MERRILL and OAKES AMES to the genus *Dendrobium*, probably on account of its habit. AMES states, indeed, the presence of only four pollinia in an examined flower but if this statement is not the outcome of the examination of a bud it lacks conclusive force on account of the great chance of open flowers dropping by some cause part of their pollinia. But also apart from the number of pollinia, it is the inflorescence which points out clearly that we have to do with an *Eria* of the affinity of the section *Cylindrolobus* and not with a *Dendrobium*, which conclusion is in full accordance with Dr. SCHLECHTER's remark when describing his *E. decipiens*. SCHLECHTER thought convenient to join the species with laterally compressed leaves in a special section which he named *Aporodes*, but in my opinion the separation is unfounded.

For many years a species of *Eria* is cultivated in the Botanic Gardens, Buitenzorg, brought by Dr. S. H. KOORDERS from his expedition to North Selebes. I have determined it as *E. aporoides* LNDL., the only species, at the time, with *Aporum*-like leaves. Whether my determination is correct cannot be controlled owing to the want of a somewhat sufficient description of this species. It is not congruent with *E. decipiens* SCHLTR., also a native of Selebes, showing according to the description a perfectly glabrous lip, in contradistinction to the farinaceous lip of the Buitenzorg specimen. In favour of the correctness of the determination one might adduce that according to Professor AMES *E. aporoides* is a widely distributed species in the Philippines, and that consequently its presence in North Selebes should not be surprising.

The plant cultivated in Buitenzorg possesses 8 pollinia, 4 big and 4 small ones.

**Dendrobium** (sect. Diplocaulobium) **papillilabium** J. J. S. n. sp.

*Pseudobulbi* approximati, e basi fusiformi superne longitudinaliter sulcata c. 0.8—1.25 cm longa, 0.4—0.375 cm diam. in collum breve tenue sectione transversa late ellipticum apice non incrassatum c. 1.35—2.75 cm longum attenuati, 1folii. *Folium* lineare, apice ..., basi leviter angustatum, obtusangule canaliculatum cum lateribus leviter convexis, subtus convexum cum canalicula longitudinali, rigide coriaceum, c. 5.5 cm longum, 0.35 cm latum. *Inflorescentia* fasciculata, spatha conduplicata anguste lineari-lanceolata c. 1.15—1.4 cm longa, pedunculis c. 0.95 cm longis, 1floris. *Flos* ephemerus. *Sepalum dorsale* e basi triangula longe filiformi-elongatum, acutum, canaliculatum, 5nervium, c. 3 cm longum, basi 0.4 cm, parte angusta 0.1 cm latum. *Sepala lateralia* cum pede gynostemii mentum subconicum cum ovario angulum subrectum faciens incurvulum antice valde apertum apice obtusissimum late retusum c. 0.55 cm formantia, patentissima, plus minusve recurva,

supra basin subfalcatula, e basi oblique triangula concava longe lineari-producta, acuta, canaliculata, 6nervia, c. 3 cm longa, basi bene 0.6 cm, supra basin 0.1 cm lata. *Petala* e basi leviter oblique dilatata lineari-filiformi-producta, acutissima, canaliculata, 3nervia, c. 2.75 cm longa, basi 0.16 cm lata. *Labellum* erectum, valde recurvum, 3lobum, costis 2 conspicuis longitudinalibus inter lobos laterales rectis ab infra basin lobi intermedii leviter undulatis decrescentibusque medium lobi intermedii fere attingentibus ima basi leviter rotundato-incrassatis, costa tertia simili ab infra basin lobi intermedii laterales paululum superante, in lobi intermedii dimidio inferiore utrinque plica angusta longitudinali supra convexa subtus canaliculata addita, minute papillosum, 5nervium, inexplanatum c. 0.65 cm, explanatum 1.1 cm longum; lobi laterales patentissimi, oblique trianguli, apicem versus dilatati, obtusi, antice haud producti, margine antico truncati et leviter crenato-undulati, hypochylium cuneato-quadrangulum c. 0.5 cm longum bene 0.5 cm latum formantes; lobus intermedius recurvus, undulatus, e basi breviter sed conspicue cuneato-contracta angulato-ovatus, apicem versus angustatus, anguste obtusus, breviter obtuse apiculatus, c. 0.6 cm longus, bene 0.4 cm latus. *Gynostemium* oblongum, dorso convexum, absque anthera c. 0.35 cm longum, clinandrio parvo excavato, apice triangulo obtuso, auriculis porrectis triangulis obtusis apice denticulatis. *Anthera* cucullata, antice plana, subquadrangula, dorso rotundata, apice membranacea rotundato-truncata, minute papillosa, c. 0.1 cm lata. Pollinia 4, valde lateraliter compressa, oblique oblonga, c. 0.1 cm longa. *Stigma* alte excavatum, longitudinale, subobovatum. Pes gynostemii cum ovario angulum subrectum faciens, vix incurvulus, lineari-oblongus, apice incurvulus concavus truncatus, c. 0.53 cm longus. *Ovarium* 6sulcatum, c. 0.4 cm longum; pedicellus teres, c. 1.95 cm longus.

SOELA-ISLANDS: Goenoeng Bapenghaja (P. VAN HULSTIJN liv. pl. cult. in Hort. Bog. sub n. 71).

Evidently closely allied to *D. stenophyton* SCHLTR. from Selebes but according to SCHLECHTER's description and sketch differing in the much smaller dimensions, smaller much shorter pedicelled flowers, truncate not rounded side lobes, ovate midlobe, the keels straight between the sidelobes, etc.

„Sepals and petals yellowish green, more yellow at top, inferior portion of lip a little yellowish with scattered purple dots more crowded along the margins, midlobe white, column light green tinged yellowish towards the top, anther greenish, column foot whitish with many purple dots which are terminated by a dirty purple transverse bar towards the base. Old flowers turning purple, except the keels." (J. G. B. BEUMÉE)

Description from materials preserved in alcohol.

**Dendrobium** (sect. Desmotrichum) **agamense** J. J. S. n. sp.

*Rhizoma* repens, elongatum, teres, c. 0.55 cm diam., vaginis tectum, radicans. *Caules* c. 3 cm distantes, adscendentes, vix ramosi, clavati, apice 1folii, 3nodes, initio vaginis tubulosis superne accrescentibus tecti, parte

inferiore tenui sectione transversa elliptica c. 2—3 cm longa, 0.37—0.45 cm lata, internodio ultimo multo majore, suboblique oblongo-elliptico, compresso, sectione transversa elliptico, apice truncato cum dente brevi ad marginem anticum, c. 4.5—5.5 cm longo, 1.65—1.45 cm lato, 1—0.95 cm crasso, ramulo c. 5nodi. *Folium* oblongo-ovato-ellipticum ad lanceolatum, apicem versus angustatum, acutum ad obtusum, basi abrupte contractum conduplicatumque, laxe undulatum, costa media supra sulcata subtus prominente, coriaceum, c. 10—15.5 cm longum, 3.5—4 cm latum. *Inflorescentiae* fasciculares ante et pone folium, pedunculis 1flores. Bractea adpressa, parva, triangula, acuta. *Flos* mediocris, sepalis dorso minute furfuraceo-punctatis. *Sepalum dorsale* anguste oblongum, apice angustatum, acutum, c. 7nervium, c. 1.6 cm longum, 0.5 cm latum. *Sepala lateralia* lacinia brevi triangula ad pedem gynostemii decurrentia, mentum breve cum ovario angulum rectum faciens conicum rectum obtusum fere 0.5 cm longum formantia, oblique anguste oblonga, acuta, breviter apiculata, 7nervia, c. 1.6 cm, tota 1.725 cm longa, 0.5 cm, basi 0.675 cm lata. *Petala* oblique lanceolata, satis acuta, basi angustata, 3nervia, costa media dorso sulcata, c. 1.625 cm longa, 0.4 cm lata. *Labellum* valde recurvum, 3lobum, basi 3nervium, carinis 3 parallelis apicem attingentibus, carinis exterioribus inferne usque ad $^2/_5$ longitudinis rectis ceterum tenuioribus et apicem usque undulatis, carina intermedia humuli in lobo intermedio undulato, inferne inter lobos laterales evanescente, explanatum totum c. 1.8 cm longum, hypochylio cuneato-obcordato bene 1 cm longo fere 0.85 cm lato; lobi laterales gynostemium superantes, brevissime liberi, rotundati, apice leviter repanduli; lobus intermedius longe unguiculatus, totus c. 0.95 cm longus, ungue lineari-oblongo, leviter irregulariter marginato, c. 0.6 cm longo, 0.275 cm lato, abrupte in laminam dilatato, lamina transverse oblonga, utrinque parce irregulariter lobata, parce conspicue transverse plicata, dente apiculi triangulo acuto instructa, explanata bene 0.4 cm longa, 1.35 cm lata. *Gynostemium* oblique conicum, apice contractum, cum anthera c. 0.36 cm longum, clinandrio excavato apice triangulo-producto auriculis triangulis denticulatis concavis breviore. *Anthera* alte cucullata, 3costata, apice leviter producta obtusa hirtella. Pollinia 4, a latere compressa, oblonga in corpusculum supra convexum subtus concavum unita, c. 0.17 cm longa. *Stigma* parvum, alte excavatum. Pes gynostemii cum ovario angulum rectum faciens, rectus, oblongus, late canaliculatus, c. 0.45 cm longus. *Ovarium* pedicellatum; pedicellus 6sulcatus, furfuraceo-punctatus, c. 0.8 cm longus.

SUMATRA. Westcoast: Agam, Batang Paloepoeh (W. GROENEVELDT, cult. sub n. 108 and 203; H. A. B. BÜNNEMEIJER without n., June 1917).

This species differs from *D. sematoglossum* SCHLTR. in the very short and blunt side lobes of the lip, longer unguiculated midlobe, parallel keels reaching the apex of the labellum and undulate far below the base of the midlobe, whereas the intermediate keel is strongest on the blade of the midlobe, evanescent between the lateral lobes. From *D. puncticulosum* J. J. S. it differs in the relatively much narrower blade of the midlobe,

longer claw, longer keels and the columnfoot standing at right angles to the ovary.

„Pseudobulbs shining dark yellowish green to olive brown. Pedicel and ovary yellow, finely puncticulate purple. Sepals and petals pale yellow dotted dark purple, the dots being confluent on the base. Lip pale yellow, central portion and side lobes yellowish white; undersurface of the central part densely spotted light purple, the side lobes sparingly spotted." (E. JACOBSON n. 108.)

Description from material preserved in alcohol.

I think, that BÜNNEMEIJER's plant belongs to the same species.

**Dendrobium** (sect. Aporum) **compressistylum** J. J. S. n. sp.

*Rhizoma* breve, repens. *Caules* approximati, e basi tenui dilatati, valde compressi, nitidi, dilute virides, foliati, c. 13 cm longi, internodiis e basi angusta oblique cuneatis apice oblique truncatis c. 1 cm longis apice 0 8 cm latis. *Folia* patentia, contigua, articulata, valde a latere compressa, oblique oblongo-triangula, acuta, margine superiore subrecta, margine inferiore curvata, rigida, carnosulo-coriacea, nitidula, dilute viridia, margine superiore c. 2.7—3.1 cm, margine inferiore 4.1—4.5 cm longa, basi 1.8 cm, transverse 1.25—1.4 cm lata; vaginae tubulosae, valde compressae, apice valde obliquae. *Inflorescentiae* pseudoterminales inter folia ultima, pedunculis folii vagina inclusis, brevissimis, nonnullis vaginulis donatis. *Flores* plerumque singulatum expansi, c. 1.3 cm lati, 1.35 cm longi, sepalis petalisque pallide flavescentibus basi macula purpurea notatis. *Sepalum dorsale* erectum, ovatum, satis acutum, leviter convexum, c. 0.55 cm longum, 0.4 cm latum. *Sepala lateralia* ad pedem gynostemii decurrentia, mentum conspicuum cum ovario angulum acutum faciens angulato-incurvum c. 0.7 cm longum formantia, patentia, superne leviter convexa, oblique triangula, obtusa, marginibus basique curvata, c. 0.65 longa, margine anteriore bene 1 cm, basi 0.93 cm metientia. *Petala* erecta, sepalo intermedio approximata, convexa, apice incurvula, oblique anguste oblonga, apicem versus angustata, acuta, basi oblique obtusa medio tantum affixa, c. 0.525 cm longa, 0.175 cm lata. *Labellum* valde undatum, basi pedi gynostemii adpressum, deinde recurvum, canaliculatum, spathulatum, 3lobum, gynostemium superans, explanatum c. 1.1 cm longum, ad lobos laterales 0.76 cm latum, ungue late lineari (marginibus praerosis), inferne ima basi excepta carnoso cum canalicula obtusangula longitudinali deinde canaliculato cum costis 2 longitudinalibus approximatis glabris inter lobos laterales in callum longitudinaliter costatum utrinque in incrassationem transversam eroso-verruculosam in lobos laterales decurrentem et apicem loborum versus decrescentem dilatatum excurrentibus, dilute ochraceo, c. 0.65 cm longo; lobi laterales erecti, expansi, patentissimi, oblique oblongo-trianguli, obtusi, subirregulariter marginati, margine postico ad basin stria marginali purpurea ornati, parte libera c. 0.2 cm longi; lobus intermedius conspicuus, latus, concavus, bifidus, obverse reniformis, lobis

suborbicularibus, erosulus, flavescenti-albus, explanatus c. 0.35 cm longus, 0.7 cm latus. *Gynostemium* breve, cum ovario angulum obtusum faciens, a dorso compressum, stigmate auriculisque purpureo-marginatum c. 0.15 cm longum, clinandrii lobo intermedio conspicuo rotundato denticulato albo antheram partim obtegente, auriculis triangulis obtusis apice albis. *Anthera* ad basin clinandrii lobi intermedii inserta, cucullata, transverse quadrangula, apice truncata, angulis rotundatis, connectivo costuliformi, alba, bene 0.1 cm lata. Pollinia 4, corpuscula 2 oblique obovata formantia, 2 interiora angustiora, 2 exteriora curvata, semipellucida, nitida, flava, c. 0.08 cm longa. *Stigma* suborbiculare, margine superiore truncatum. Pes gynostemii cum ovario angulum acutum faciens, praesertim supra basin et infra apicem obtusangule incurvus, linearis, apicem versus vix dilatatus, truncatus, canaliculatus, dorso convexus, albidus, apice flavescens cum macula conspicua longitudinali ochracea, inexplanatus c. 0.675 cm longus. *Ovarium* teres, 6sulcatum, dilute viride, cum pedicello sensim attenuato c. 0.6 cm longum.

RIAU ARCHIPELAGO: (H. A. B. BÜNNEMEIJER, liv. plant cult. in Hort. Bog. sub n. 1137, imported September 1919).

SUMATRA: Deli (L. J. TOXOPEUS, liv. pl. cult. in Hort. Bog. sub n. 5, imported September 1922).

I failed to find a description suiting this well characterized plant. It possesses rather large flowers with a spathulate three-lobed lip, the very broad midlob deeply two-lobed with nearly orbicular lobes.

Description from cultivated specimens.

**Dendrobium** (sect. Ceratobium) **pseudoconanthum** J. J. S. n. sp.

*Rhizoma* validum, repens, cylindricum, c. 2.2 cm diam., internodiis brevibus. *Caules* c. 3.25—3.5 cm distantes, validi, erecti, inferne cylindracei et in c. 28—35 cm supra basin crassissimi, superne attenuati, compressi sectione transversa elliptici, ad c. 2 m longi, 1.6 cm diam., inferne vaginis tubulosis tecti, ceterum foliati, internodiis ad c. 7 cm longis. *Folia* patentia, late ovalia, apice late rotundata et breviter oblique 2lobulata, basi rotundata et breviter oblique 2lobulata, basi rotundata amplexicaulia, margine recurvula subacutaque, nervis c. 7 supra sulcatis subtus haud prominentibus, nitide viridia, subtus opaca, crasse carnoso-coriacea, apicem caulis versus decrescentia, c. 9.5—4 cm longa, 6.4—3.3 cm lata; vaginae tubulosae, internodiis paulo brevioribus vel aequilongis. *Inflorescentiae* e nodis superioribus adscendentes, laxe pluriflorae, pedunculo tereti, viridi, nitido, c. 12 cm longo, nonnullis vaginulis tubulosis donato, rachide leviter flexuosa, obtusangula, nitide viridi, c. 10 cm longa. Bracteae ad basin pedicellorum, adpressae, triangulae, ad c. 0.35 cm longae. *Flores* minusculi, patentissimi, sepalis albis intus pallide flavescenti- et violaceo-suffusis. *Sepalum dorsale* porrectum, apice oblique revolutum, triangulo-lanceolatum, sensim angustatum, acutum, concavum, leviter undulatum, c. 1.5 cm longum, basi 0.6 cm latum. *Sepala lateralia* cum pede gynostemii mentum anguste conicum cum ovario

angulum fere rectum faciens apice incurvum anguste obtusum c. 0.83 cm longum facientia, divergentia, margine antico libera, apice recurva, canaliculato-concava, leviter undulata, oblique lanceolato-triangula, sensim angustata, acuta, costa media dorso prominente, superne violaceo-tincta, c. 1.5 cm longa, basi 0.9 cm metientia. *Petala* patentia, torta, haud undulata, linearia, apicem versus leviter dilatata, anguste obtusa, in fundo pallide flavescenti praesertim dorso violaceo-colorata, inexplanata c. 1.4—1.65 cm, explanata 2.1 cm longa, 0.325 cm lata. *Labellum* ungue angusto lineari canaliculato dilute viridi c. 0.325 cm longo apici pedis gynostemii adnatum, 3lobum, concavum, subtus costa longitudinali instructum, intus 3costatum, costis parallelis rectis albidis striis violaceis maculatis separatis, intermedia inferne quam ceterae humiliore et basi evanescente in flexu lobi intermedii altiore omnibus ultra medium lobi medii sensim evanescentibus, totum explanatum c. 2.15 cm, usque ad apicem loborum lateralium fere 1.4 cm longum, 1.1 cm latum; lobi laterales erecti, lati, gynostemium superantes, oblique angulato-subsemiorbiculares, antice breviter obtuse producti, concavi, margine recurvi, irregulariter marginati, flavescenti-albi, intus verruculoso-rugosi et valde confluenter lilacino-nervosi, apice libero c. 0.175 cm longo, mesochylium ambitu suborbiculare basi late cuneatum formantes; lobus intermedius porrectus, valde recurvus, subovato-ovalis, basi breviter et leviter contractus, apice brevissime acute acutatus, minute apiculatus, undulatus, albidus, dilute lilacino-suffusus, subtus fascia longitudinali lilacina notatus, c. 0.93 cm longus, 0.57 cm latus. *Gynostemium* rectum, crassum, ambitu rectangule oblongum, papillosum, dorso infra antheram gibbosum, subtus concavum, album, lilacino-suffusum, c. 0.525 cm longum, clinandrio profunde excavato, serrulato, filamento subulato, auriculis paulo breviore, auriculis antheram aequantibus, oblique subtruncatis, margine superiore dentiferis. *Anthera* cucullata, transverse quadrangula, apice leviter contracto et truncato fascia transversa puberula instructa, antice inferne sulco satis conspicuo transverso donata, postica 2loba, pallide flavescens, c. 0.225 cm lata. Pollinia 4, in corpuscula 2 oblonga unita, dilute flava, c. 0.14 cm longa. *Rostellum* semiorbiculare, convexum, puberulum. *Stigma* longitudinale, anguste lineare, margine inferiore dente parvo instructum. Pes gynostemii cum ovario angulum rectum faciens, apicem versus sensim angustatus, canaliculatus, c. 0.8 cm longus, inferne longitudine c. 0.4 cm albus, intus minutissime et parce lilacino-puncticulatus, parte superiore ungui labelli adnatus. *Ovarium* cum pedicello angulum subrectum formans, 6sulcatus, pallide viride, leviter violaceo-suffusum, c. 0.45—0.5 cm longum; pedicellus teres, basi incrassatus, viride-albus, c. 2—2.3 cm longus.

SELEBES: In the southern part, Bone near Pampanoea (ROOKMAKER).

Flowers of this species were sent for the first time by the late Mr. D. BRAUTIGAM, the then assistent-resident in Pampanoea, afterwards also by Dr. D. DE VISSER SMITS, Batavia.

It closely approaches the Papuan *D. conanthum* SCHLTR., but differs in the longer stems, broader leaves, smaller differently coloured flowers, a pro-

portionately much larger midlobe and the gradually diminishing keels on the lip.

Description from a living specimen.

**Dendrobium** (sect. Calcarifera) **Boumaniae** J. J. S. n. sp.

*Caules* approximati, flexuosi, e basi tenui sensim incrassati, sectione transversa elliptici, adulti sulcati, in planta adest ad c. 25 cm longi, 0.8 cm lati. *Folia* patentissima, lanceolata, oblique obtusa cum apiculo adnato, latere breviore acuto, costa media supra sulcata subtus prominente, tenuiuscula, nitidule atroviridia cum costa media angusta violacea, subtus nitidule violacea, c. 6.75 cm longa, bene 2 cm lata; vaginae tubulosae, apice truncatae, dilute virides, longitudinaliter obscurius striatae, praesertim in striis sordide violaceo-punctatae. *Inflorescentiae* in caulibus defoliatis ad nodos in flexibus, abbreviatae, 1florae, pedunculo tenui, dilute viridi, violaceo-punctato, c. 0.2 cm longo. Bractea parva, triangula, acuta, violacea. *Flos* mediocris, c. 2.4 cm diam., 1.85 cm longus, sepalis ochraceis dorso vix purpureo-suffusis petalisque dilutioribus patentissimis. *Sepalum dorsale* subovatum, obtusum, leviter convexum, 5nervium, fere 1.1 cm longum, 0.6 cm latum. *Sepala lateralia* lacinia oblique lineari-oblonga concava ad pedem gynostemii decurrentia, mentum calcariforme cum ovario angulum acutum faciens reversum subrectum dorso leviter sigmoideum obtusum c. 1 cm longum formantia, marginibus anticis basi brevissime connatis, parte antice oblique oblonga breviter acuminata, c. 1 cm, tota 1.8 cm longa, basi 0.625 cm lata, lacinia c. 0.9 cm longa, bene 0.3 cm lata. *Petala* oblique oblonga, obtusa, basi angustata, superne erosulo-crenulata, convexa, superne parte mediana longitudinaliter concava, bene 1.2 cm longa, 0.575 cm lata. *Labellum* simplex, spathulatum, album, apice vix purpureo-notatum, fasciis 2 longitudinalibus satis latis convexis supra basin laminae ad apicem gynostemii elevatis sulco tantum separatis in ungue decurrentibus cum unguis marginibus confluentibus inferne a marginibus liberis et carinas altas adpressas supra basin terminantes facientibus, c. 1.95 cm, explanatum 2.25 cm longum, ungue lineari acutangule canaliculato, inferne longitudine c. 0.3 cm pedi gynostemii adnato, ceterum eo adpresso, c. 0.95 cm longo, medio 0.2 cm lato, lamina porrecta, cum ungue angulum obtusum faciente, basi gynostemio arcte adpressa, convexa, basi marginibus valde recurva, apice incurvula, cuneato-obcordata, explanata late obcordata, lobis rotundata erosulaque, c. 1.25 cm longa, 1.15 cm lata. *Gynostemium* breve, crassum, dorso convexum, apice gibbosum, ceraceum, nitidule album, c. 0.35 cm longum, auriculis antheram aequantibus, quadrangulis, subtruncatis, angulo antico rotundatis, angulo postico vix in lobulum minutum obtusum productis, aurantiacis, filamento subulato, auriculis bene breviore. *Anthera* cucullata, antice convexa, antice visa quadrangula apice leviter contracta, margine apicali truncata ciliolataque angulis exceptis revoluta, alba, c. 0.2 cm lata. Pollinia 4, a latere compressa, oblique obovata, 2 interiora tenuia, 2 exteriora crassiora extus convexa, nitida, dilute flava, c. 0.1 cm longa. *Stigma* alte excavatum, urceoli-

forme. Pes gynostemii cum ovario angulum acutum faciens, linearis, vix sigmoideus, canaliculatus, dorso convexus, carnosulus, apice tenuior, albidus, apice flavido-purpurascens, c. 1 cm longus. *Ovarium* teres, 6sulcatum, violaceum, c. 0.475 cm longum, cum pedicello pallide viridi, c. 0.9 cm longo sigmoideum.

SUMATRA. Bengkoeloe: Wai Tenoeng 1000 m. (A. BOUMAN-HOUTMAN n. 4, cult. in Hort. Bog.).

In the shape of the flowers this resembles *D. croceocentrum* J. J. S. It differs, however, in the much broader leaves and the colour of the flowers. Moreover the claw of the lip is narrower, and the blade more convex, less undulate at the apex, not angular in outline.

Description from a cultivated specimen.

**Dendrobium** (sect. Calcarifera) **kruiense** J. J. S. n. sp.

*Caules* approximati, e basi tenui paulo incrassati, teretes, praesertim superne flexuosi, nitidi, adulti sordide fusci, ad c. 55 cm longi, 0.45 cm diam., internodiis ad c. 3.5 cm longis. *Folia* .... *Inflorescentiae* ad nodos caulium defoliatorum, abbreviatae, 1florae (an semper?), pedunculo brevissimo, nonnullis vaginulis brevibus donato. Bractea parva, adpressa, triangula. *Flos* mediocris, c. 2.5 cm diam., albus, sepalis dorso vix purpureo-suffusis. *Sepalum dorsale* cum ovario angulum obtusum faciens, oblongo-ovatum, obtusum, medio longitudinaliter obtusangule convexum, c. 1.35 cm longum, vix 0.7 cm latum. *Sepala lateralia* lacinia obliqua anguste oblonga concava ad pedem gynostemii decurrentia, mentum calcariforme reversum cum ovario angulum acutum faciens subrectum dorso vix sigmoideum obtusum subteres fere 1.1 cm longum formantia, marginibus anticis basi brevissime connata, parte antice divergentia, suboblique subovato-oblonga, apice oblique obtusiuscula vix acutata, c. 1.35 cm, tota 2.15 cm longa, 0.7 cm lata, lacinia 0.35 cm lata. *Petala* divergentia, non reflexa, oblique rhombea, oblique obtusissima, brevissime apiculata, basi cuneata, superne erosula, fascia longitudinali angusta convexa, dorso leviter sulcata, c. 1.4 cm longa, 0.825 cm lata. *Labellum* simplex, spathulatum, leviter sigmoideum, costis 2 conspicuis longitudinalibus approximatis sulco separatis apicem labelli attingentibus convexis e basi laminae usque ad $^1/_3$—$^2/_5$ partes supra basin crassissimis ubi obtusangule recurvis vix flavo-virescenti-suffusis apicem versus attenuatis cum costula tertia convexa interposita (an semper?) in ungue decurrentibus arcte contiguis subplanis ungue paululo angustioribus in medio labelli abrupte in dentem a latere compressum exeuntibus, subtus sulco in ungue evanescente instructum, explanatum c. 2.3 cm longum, ungue inferne longitudine c. 0.35 cm pedi gynostemii adnato, ceterum eo parallelo, lineari, canaliculato, c. 0.95 cm longo, 0.275 cm lato, lamina cum ungue vix angulum obtusum faciente, recta, porrecta, marginibus bene recurva, inexplanata cuneato-quadrangula, explanata cuneato-obovata, apice lato truncata rotundato-trilobulataque cum lobulo intermedio paulo angustiore, bene 1.3 cm longa, 1.1 cm lata. *Gynostemium* breve, labello non

omnino adpressum, dorso convexum, apice gibbosum, utrinque costulatum, nitide album, basi pallide viride, c. 0.5 cm longum, auriculis magnis parallelis antheram superantibus oblique triangulis anguste obtusis vel apice plus minusve contractis margine antico valde obliquis margine postico subirregularibus antice flavo-aurantiacis. *Anthera* cucullata, antice visa quadrangula, basi dilatata et leviter rotundato-bilobulataque, apice longius producta incurvulaque utrinque dentifera et papillosa, flavescenti-alba, fere 0.2 cm longa. Pollinia 4, 2 interiora quam exteriora magis compressa, nitida, pallide flavescentia, bene 0.1 cm longa. *Stigma* alte excavatum, semiovale, apice truncatum. Pes gynostemii cum ovario angulum acutum faciens, reversus, subrectus, vix sigmoideus, linearis, anguste canaliculatus, canalicula costis crassiusculis limitata, apice altius excavatus, c. 0.95 cm longus. *Ovarium* 6sulcatum, violaceum, c. 0.6 cm longum, cum pedicello albido viridi- et violaceo-suffuso c. 1.2 cm longo sigmoideum.

SUMATRA. Bengkoeloe: Liwa near Kroei (A. BOUMAN-HOUTMAN, n. 1, cult. in Hort. Bog.).

Another ally of *D. croceocentrum* J. J. S., with which it agrees in the colour of the flowers, but with the petals more cuneate at base, the lip almost equally trilobed at the apex, a very different column, and the anther widened towards the base. Unfortunately leaves are lacking on the specimen.

Description from a cultivated specimen.

**Bulbophyllum** (sect. Coelochilus) **Jensenii** J. J. S. n. sp.

Pusillum. *Rhizoma* repens, ramosum, radicans, c. 7 cm longum, initio vaginis tubulosis apiculatis pallide virescentibus pseudobulbos includentibus mox rumpentibus pallide brunneo-exarescentibus tectum. *Pseudobulbi* biseriales, rhizomate adpressi, novelli ovales leviter costulati, semipellucidi nitidi dilute virides, mox oblongi plus minusve ovoidei valde c. 6—7costati, pallide virides, c. 0.6—0.95 cm longi, 0.3—0.37 cm diam., 1folii. *Folium* breviteri ovatum, oblongo-ovatum ad oblongum, obtusum vel vix acutatum, bas breviter petiolato-contractum, supra in utraque parte costae mediae canaliculatae leviter convexum, subtus subplanum cum costa media vix obtuse prominula, carnosulum, nitidule viride, subtus subpallidius, c. 1—2.5 cm longum, 0.7—0.95 cm latum. *Inflorescentiae* e nodis rhizomatis, 1florae, pedunculo filiformi, pallide viridi, c. 1.5—1.7 cm longo, basi nonnullis vaginulis approximatis tubulosis donato. Bractea tubulosa, triangulo-producta, acuta, c. 0.3 cm longa. *Flos* mediocris, tener, c. 2 cm latus, sepalis patentissimis medio fere obtusangule recurvis semipellucide flavescenti-albidis. *Sepalum dorsale* lineare, paulo infra medium leviter constrictum, obtusum, apiculatum, basi convexum, ceterum concavum, nervis 3 dorso prominulis, fere 1.1 cm longum, 0.2 cm latum. *Sepala lateralia* divergentia, oblique lanceolata, subfalcatule incurvula, medio fere leviter constricta, breviter subacuta, minute apiculata, margine antico incurvula, nervis 3 dorso prominulis, c. 1.1 cm longa, 0.325 cm lata. *Petala* parva, porrecta, divergentia, oblique

oblonga, falcato-incurva, supra basin angustissima, supra medium latissima, subacuta, inaequilatera, convexa, praesertim margine postico recurva, 1nervia, nervo 1 tenui addito, flavescenti-albida, margine postico tenuiter atropurpurea, margine antico cum costa media etiam atropurpureis ante medium in maculam conspicuam atropurpuream confluentibus, c. 0.28 cm longa, 0.125 cm lata. *Labellum* immobile, porrectum, spathulatum, sigmoideum, tenue, inexplanatum 1 cm longum, nervis 3 intus costato-prominentibus parte basilari pedi gynostemii verticaliter adnata, ambitu ovali concava basi auriculis 2 reversis breviter falcato-incurvis obtusis arcte contiguis donata c. 0.15 cm longa, deinde incurvum, valde convexum, ungue inexplanato lineari marginibus valde recurvis fere tubuloso c. 0.36 cm longo, lamina inexplanata oblonga obtusa valde convexa subtus valde concava nervis ramosis c. 7costata c. 0.6 cm longa, 0.23 cm lata. *Gynostemium* parvum, valde incurvum, tenuiusculum, basi infra stigma vix incrassatum, flavescenti-albidum, bene 0.2 cm longum, clinandrio concavo suborbiculari, apice fisso, utroque latere inaequaliter 5—7dentato, dentibus anticis maximis falcato-subulatis recurvis. *Anthera* inter dentes 2 medianos inserta, alte cucullata, lateraliter compressa, obtusa, connectivo convexo-incrassato, c. 0.6 cm longa. *Stigma* longitudinale, lineare. Pes gynostemii brevissimus, oblongus, c. 0.05 cm longus. *Ovarium* leviter 6sulcatum, c. 0.2 cm longum; pedicellus teres, c. 0.8—1 cm longus, 0.15—0.175 cm supra basin articulatus.

AMBON: (Hj. JENSEN 1922. liv. pl. cult. in Hort. Bog. sub nrs. 22 and 49).

This species is the first of the section *Coelochilus* known to science of non-Papuan origin. It is a little plant with tender relatively large yellowish flowers wich are freely produced.

Description from cultivated plants and materials preserved in alcohol.

**Bulbophyllum** (sect. Polyblepharon) **bivalve** J. J. S. n. sp.

Pusillum. *Rhizoma* repens, brevissimum. *Pseudobulbi* dense aggregati, parvi, cum rhizomate angulum acutum facientes, oblique subglobosi ad ovoidei, nitidule virides, c. 0.5 cm longi, 0.43—0.475 cm diam., 1folii. *Folium* oblongum, obtusum, apiculatum, basi sensim angustatum, supra in utraque parte sulci longitudinalis convexum, subtus obtusangule convexum, crasse carnosum, supra nitidule viride, subtus opacum, c. 2.75—4.25 cm longum, 1—1.3 cm latum. *Inflorescentiae* fasciculatae, 1florae, pedunculis filiformibus, parcissime furfuraceo-punctatis, pallide virescentibus plus minusve purpureo-suffusis, c. 2.7—4.4 cm longis, basi nonnullis vaginulis tubulosis donatis. Bractea tubulosa, triangulo-producta, tenuiter membranacea, ovarium aequans, c. 0.2 cm longa. *Flos* non resupinatus, angustus, c. 3—3.75 cm longus, sepalis continuis vel leviter reflexis et postice angulum obtusum facientibus, valde atrofusco-purpureis, apicem versus dilutioribus. *Sepalum dorsale* e basi ovata longe lineari-subulato-acuminatum, acutum, convexum, intus ad basin parce dorso sparse basi densius atrofurfuraceo-puncticulatum, 3nervium, fere 2.2

cm longum, basi dilatata c. 0.85 cm longa, 0.55 cm lata. *Sepala lateralia* marginibus proximis in laminam sepalo dorsali similem convexam e basi ovata longe acuminatam apice tantum bidentatam c. 2.2 cm longam, 0.6 cm latam arcte conglutinata, acuta, 3nervia, intus ad basin parcissime dorso sparse basi densius furfuraceo-puncticulata, 0.3 cm lata. *Petala* parva, porrecta, divergentia, angulum acutum facientia, verticalia, oblique ovato-triangula, longius acuminata, acuta, apice incrassata, concava, dorso convexa, utrinque dense puberula, 1nervia, pallide sordide flavescentia, stria longitudinali viridi-violacea in acumine tenuissima, marginibus latis viridibus, apice sordide virescenti, omnino leviter violaceo-suffusa, gynostemium superantia, c. 0.4 cm longa, 0.275 cm lata. *Labellum* valde mobile, membrana satis longa late lineari facie inferiore gynostemii insertum, e basi dilatata recurva triangula callo conspicuo convexo postice longitudinaliter sulcato donata subtus concava basi auriculis 2 reversis falcato-incurvis oblongis obtusis instructa in caudam longissimam cum parte inferiore angulum obtusum facientem rectam lineari-filiformem basi excepta longe tenerrime ciliatam productum, basi atroviride, superne pallescens, ciliis decoloribus, totum absque ciliis c. 1.375 cm longum, basi 0.1 cm latum, cauda fere 1.2 cm longa cum ciliis ad c. 0.5 cm lata, ciliis patentissimis basin versus decrescentibus ad c. 0.25 cm longis. *Gynostemium* brevissimum, crassum, albidum, totum c. 0.24 cm longum, clinandrio 2partito, lobis verticalibus oblique quadrangulis basi leviter contractis margine postico in dentem triangulum acutum margine antico in auriculam elongatam falcato-filiformen atropurpureum productis. *Anthera* inter lobos clinandrii inserta, minuta, cucullata, ambitu subquadrangula, apice tenuiter membranaceo-producta abrupte reflexa truncata antice concava, connectivo gibboso verruculoso papilloso, purpurascens, fere 0.05 cm longa. Pollinia in corpusculum subsemiglobosum unita, vix 0.02 cm longa. Pes gynostemii subnullus, convexus. *Stigma* anticum, parvum, suborbiculare, inferne purpureo-marginatum. *Ovarium* recurvum, crassiusculum 6sulcatum, dense furfuraceum, purpureo-suffusum c. 0.3 cm longum.

AMBON: (Hj. JENSEN 1922, liv. pl. cult. in Hort. Bog. sub nrs. 11 and 16).

Approaching *B. heliophilum* J. J. S. from New-Guinea but with much smaller flowers and a much thinner lip.

Description from cultivated specimens.

**Bulbophyllum** (sect. Fruticicola) **caecum** J. J. S. n. sp.

Parvulum. *Rhizoma* abbreviatum, radicans. *Pseudobulbi* dense aggregati, oblongi, inaequaliter satis acute quadranguli, lateribus concavi, latere postico valde canaliculati, nitidule virides, c. 1—1.1 cm longi, 0.5—0.6 cm diam., 1folii. *Folium* lanceolatum, obtusum, breviter apiculatum, basi angustatum, supra in utraque parte costae mediae supra sulcatae subtus obtuse prominulae convexum, carnoso-coriaceum, supra nitidule viride, subtus opacum, c. 4.5—6.25 cm longum, 1.1—1.4 cm latum. *Inflorescentiae* pone

pseudobulbos fasciculatae, in canalicula absconditae, folio dorso adpressae, 1florae, pedunculo filiformi, pallide viridi, c. 0.95 cm longo, basi nonnullis vaginulis tubulosis donato. Bractea arcte tubulosa, apice leviter infundibuliformi ampliata, obliqua, acuta, c. 0.23 cm longa. *Flos* parvus, c. 0.65—0.75 cm latus, sepalis divergentibus. *Sepalum dorsale* ovario continuum, lanceolatum, ab infra medium angustato-acuminatum, acutum, vix apiculatum, parte inferiore concavum, parte superiore convexum, 3nervium, dilute viride, striis 3 longitudinalibus marginibusque versus apicem confluentibus e punctis atroviolaceo-purpureis ornatum, apice extremo dilute viride, c. 0.55 cm longum, 0.16 cm latum. *Sepala lateralia* divergentia, angulum acutum facientia, oblique lanceolato-triangula, acuta, vix apiculata, 3nervia, dilute viridia, striis 4 longitudinalibus apicem haud attingentibus e punctis atroviolaceo-purpureis c. 0.6 cm longa, supra basin 0.175 cm lata. *Petala* parva, porrecta, gynostemio adpressa, oblique oblonga, dimidio inferiore leviter contracta subspathulata, rotundata, leviter obtusangule canaliculata cum lateribus convexis, apice recurvula, margine minute papillosa, 1nervia, atroviolaceo-purpurea, c. 0.16 cm longa, 0.1 cm lata. *Labellum* mobile, unguiculo satis conspicuo 3nervio insertum, recurvulum, simplex, lateraliter compressum, a latere visum falcatulo-oblongum apicem versus attenuatum, supra visum lineari-oblongum, obtusum, basi subtus visa obtusangule excisum, subtus convexum, supra inferne alte superne marginibus erectis decrescentibus leviter canaliculatum, partibus erectis margine papilloso excepto utrinque cum canalicula glabris, ceterum patentissime pilosum, carnosulum, c. 0.2 cm longum, absque pilis c. 0.075 cm latum. *Gynostemium* breve, dorso convexum, vix 0.125 cm longum, clinandrio concavo, apice triangulo, auriculis porrectis, antheram bene superantibus, e basi triangula subabrupte subulato-productis, ad basin partis subulatae denticulo plus minusve distincto instructis. *Anthera* cucullata, subovalis, connectivo apice crasse obtuse producto, lobulis e basilaribus recurvulis, papillosa, c. 0.03 cm lata. Pollinia 4, inaequalia, lateraliter compressa, oblique triangula, extus convexa, intus plana, c. 0.125 cm longa, 2 interiora multo minora et tenuiora. *Stigma* alte excavatum, longitudinale, ovale. Pes gynostemii cum ovario angulum obtusum faciens, brevis, crassus, apice dilatato 3lobulatus, lobulis lateralibus incurvis porrectis obtusis, lobulo intermedio breviore latiore obtuso labellum gerente, infra 0.1 cm longus. *Ovarium* 6sulcatum, c. 0.1 cm longum; pedicellus tenuis, c. 1.25 cm longus, 0.125 cm supra basin articulatus.

AMBON: (Hj. JENSEN, 1922, liv. pl. cult. in Hort. Bog. sub nrs. 30 and 35).

Though the rhizome is not at all cauliform this species is to be reckoned to the section *Fruticicola*. It is the first representative of this section in Ambon remarkable for the inflorescences being hided behind the leaves.

Description from living specimens and materials preserved in alcohol.

**Bulbophyllum** (sect. Dialeipanthe) **Nieuwenhuisii** J. J. S. n. sp., forma pelorica.

*Pseudobulbi* approximati, elongato-ovoidei deinde longitudinaliter sulcati, virides, c. 2.5 cm longi, 1.1 cm diam., 1folii. *Folium* erectum, curvulum, lanceolatum, apice lato conduplicato-acuto recurvum, basi in petiolum contractum, margine recurvum, costa media supra canaliculata subtus versus basin obtuse prominente, carnosum, nitide viride, subtus opacum pallidiusque, totum c. 11.3 cm longum, 3.2 cm latum, petiolo canaliculato-conduplicato c. 1.7 cm longo. *Inflorescentiae* e basi pseudobulborum, intervallis paucos flores gignentes, pedunculo tereti, rigido, nigrescenti, nitido, c. 19 cm longo, 0.1 cm diam., nonnullis vaginulis arcte tubulosis donato, rachide brevi, viridi. Bracteae alternatim bifariae, infundibuliformi-tubulosae, acutae, dorso carinatae, virides, c. 0.7 cm longae. *Flores* singulatim florentes, mediocres, clausi vel expansi. *Sepalum dorsale* lanceolatum, basi latum, sensim acuminatum, acutum, mucronatum, canaliculato-concavum, sordide albidum, nervis c. 9 longitudinalibus dorso prominentibus venis transversis conjunctis sordide purpureis, dorso nitidum, c. 2.2 cm longum, 0.6 cm latum. *Sepala lateralia* dorsali subsimilia, ad pedem gynostemii decurrentia, obliqua, angulato-concava, dorso carinata, c. 2.4 cm longa, 0.6 cm lata. *Petala* parva, gynostemio breviora, ovato-quadrata, apice lato paululo contracto tridentatum, dentibus exterioribus triangulis acutis interdum plus minusve denticulatis, dente intermedio longiore subulato, semipellucide albida, stria mediana marginibusque atropurpureis, in utraque parte striae intermediae saepe stria irregulari addita, apice utrinque semipellucide punctata, tota c. 0.3 cm longa, 0.2 cm lata. *Labellum* pede gynostemii insertum, immobile, petalis subsimile, ovatum, apice tridentatum, dentibus exterioribus parvis divergentibus triangulis acutis interdum denticulatis, dente intermedio in mucronem filiformem multo longiorem producto, semipellucide albidum, striis 5 longitudinalibus marginibus atropurpureis, marginibus semipellucide punctatis, totum c. 0.55 cm longum, 0.43 cm latum, mucrone c. 0.15 cm longo. *Gynostemium* conspicuum, oblongo-quadrangulum, medio leviter constrictum, dilute viride, c. 0.7 cm longum, 0.4 cm latum, apice rotundato-excisum cum filamento brevissimo, auriculis porrectis quadrangulis apice lacinulatis. *Anthera* parvula, cucullata, suborbicularis, basi emarginata, pallide flavescens, valde purpureo-suffusa. Pollinia 4, flava, 2 interiora quam exteriora multo angustiora. *Stigma* magnum, transverse quadrangulum, margine inferiore valde prominente angulis inferioribus in brachium convexum reversum productis. Pes gynostemii brevissimus, latus, obtusus. Ovarium 6sulcatum, nitidum, viride, c. 0.8 cm longum; pedicellus viridis, c. 0.8 cm longus.

BORNEO: Boekit Kasian. (Exp. A. W. NIEUWENHUIS 1899, SAKERAN liv. pl. cult. in Hort. Bog. sub n. 1804).

This species is many years since under cultivation in the Buitenzorg Gardens. I took it earlier for *B. cleistogamum* RIDL., as did Mr. RIDLEY himself, to whom I forwarded dry material. On closer examination, however,

too many differences came to light apart from the colour which is also deviating; reason why I resolved to describe it as a new species.

The plant produces at Buitenzorg nothing but peloric flowers, which often remain unopened and only at the base of the sepals split up a little, sometimes, however, widely expand.

**Thrixspermum** (sect. Dendrocolla) **incurvicalcar** J. J. S. n. sp.

*Caulis* tenuis, c. 7 cm longus, internodiis c. 0.7—0.8 cm longis, radicibus tenuiusculis. *Folia* patentia vel subpatentissima, lanceolata, apice subcontracta inaequaliter bidentata cum apiculo subulato interposito, basi leviter angustata, supra in utraque parte costae mediae sulcatae leviter convexa, subtus obtuse carinata, carnosa, nitidule viridia, c. 4.5 – 5.5 cm longa, 1.1—1.23 cm lata; vaginae tubulosae, sectione transversa ellipticae, longitudinaliter costatae, c. 0.3 cm latae. *Inflorescentiae* deinde 2 superimpositae, vaginam dorso ad basin infra radicem perforantes, patentes, adscendentes, folia paulum superantes, diu flores gignentes, multiflorae, quaquaversae, pedunculo tenui, tereti, apice conspicue incrassato, viridi, c. 5.75—6.25 cm longo, inferne infra 0.1 cm, apice fere 0.25 cm diam., vaginulis 2 brevibus tubulosis donato, rachide crasse carnosa, valde brevinodi, c. 1—1.1 cm longa, cum bracteis 0.5—0.6 cm diam. Bracteae quaquaversae, valde approximatae, patentissimae, recurvae, crasse triangulae, acutae, basi rachidem semiamplectentes, canaliculatae, dorso valde carinatae, nitide flavescenti-virides, c. 0.2—0.25 cm longae. *Flores* mediocres, singulatim expansi, ephemeri, valde aperti, c. 1.4 cm lati, 1.1 cm alti, sepalis petalisque flavescentibus. *Sepalum dorsale* erectum, oblongo-obovatum, rotundatum, dorso ad apicem apiculo conico marginem haud superantem instructum, concavum, basi convexa breviter unguiculato-contractum, c. 0.7 cm longum, 0.38 cm latum. *Sepala lateralia* patentissima, oblique angulato-obovata, apice oblique truncato-obtusa cum apiculo brevi, basi leviter contracta, costa media dorso paululo incrassata, c. 0.67 cm longa, 0.45 cm lata. *Petala* oblique spathulata, obtusissima, concava, basi convexa, c. 0.7 cm longa, 0.3 cm lata. *Labellum* apici pedis gynostemii insertum, saccatum, 3lobum, pallide flavescens, calcari dorso et margine loborum exceptis castanee marmorato-maculatum, usque ad apicem ovarii c. 0.65 cm longum, ex apice pedis gynostemii usque ad calcaris apicem 0.475 cm, ex apice loborum lateralium usque ad apicem calcaris 0.675 cm metiens, explanatum c. 0.7 cm longum, 0.95 cm latum, intus infra lobum intermedium callo transverso lato humili antice viso aequilateraliter trapeziformii apice truncato glabro immaculato postice in fasciam longitudinalem paulo angustiorem planam inferne pilosam albidam producto instructum; lobi laterales erecti, gynostemium superantes, lati, oblique semiovales, rotundati, leviter concavi, margine intus et extus versus apicem pilis mediocribus leviter clavatis laxiusculis vestiti; lobus intermedius adscendens, magnus, lobos laterales superans, leviter concavus, ambitu bene semiorbicularis, leviter 3lobulus, lobulis lateralibus minoribus omnibus

rotundatis, intus omnino margine et extus parte mediana excepta pilis mediocribus leviter clavatis laxiusculis vestitus, pilis apicalibus paulo brevioribus, explanatus c. 0.3 cm longus, 0.44 cm latus; saccus valde incurvus, conicus, obtusus, pariete postico intus incrassatum, intus pilosum. *Gynostemium* longiusculum, rectum, album, bene 0.2 cm longum, apice truncatum, clinandrio concavo, minute bidenticulato. *Anthera* cucullata, antice visa rotundato-quadrangula, apice paulum dilatata, brevissime acute apiculata, albida, connectivo leviter canaliculato flavescenti-albo, c. 0.1 cm lata. Pollinia 4, oblique oblonga, dilute flava, 2 antica curvata antice convexa, 2 postica multo minora tenuissima, stipite brevi lato, glandula transversa curvata. *Rostellum* bipartitum, laciniis falcatis. *Stigma* alte excavatum, rotundato-triangulum. Pes gynostemii cum ovario angulum rectum faciens, rectus, bene 0.1 cm longus. *Ovarium* sessile, tenue, 6sulcatum, dilute viride, c. 0.5 cm longum.

SUMATRA. Bengkoeloe: Soekau, on a rock (A. BOUMAN-HOUTMAN n. 46. culi. in Hort. Bog. 1924).

A very distinct species of the *Dendrocolla* section with very thick bracts and a much incurved spur.

Description from a living specimen.

**Sarcochilus ciliatus** J. J. S. comb. nov. — *Dendrocolla ciliata* RIDL. in Journ.R.As.Soc.Str.Br.XLIV, 192; Mat. (1907),186; Fl.Mal.Penins.IV (1924), 188. — *Thrixspermum blepharolobum* SCHLTR. in ENGL. Bot. Jahrb. XLV.Beibl. Nr.104 (1911),58.

**Sarcochilus bigibbus** J. J. S. comb. nov. — *Thrixspermum bigibbum* SCHLTR. in ENGL.Bot.Jahrb.XLV, Beibl.Nr.104 (1911),58.

The above species are better placed in *Sarcochilus*, though aberrant in the small depression at the base of the lip replacing the spur. In the shape of the column and pollinia they agree wholly with *Sarcochilus* and not with *Thrixspermum*.

Another ally is *S. decipiens* J. J. S. from Bali.

**Aerides recurvipes** J. J. S. n. sp.

..... *Inflorescentiae* decurvae, valde glutinosae. Bracteae parvae, triangulae, c. 0.2 cm longae. *Flores* reversi, erecti, saturate purpurei, c. 0.95 cm lati, 1.8 cm longi, sepalis petalisque patentissimis incurvis. *Sepalum dorsale* ovale, obtusum, apiculatum, concavum, c. 0.8 cm longum, 0.475 cm latum. *Sepala lateralia* ad pedem gynostemii decurrentia, oblique suborbicularia, obtusa, concava, basi convexa, c. 0.67 cm, tota 0.77 cm longa, 0.7 cm lata. *Petala* oblique ovalia, obtusissima, suberosula, c. 0.625 cm longa, 0.4 cm lata. *Labellum* apici pedis gynostemii insertum, 3lobum, calcaratum, e basi usque ad apicem lobi intermedii c. 0.8 cm, usque ad apicem loborum lateralium 0.6 cm, usque ad apicem calcaris 1 cm metiens; lobi laterales porrecti, incurvi, horizontales, sese tegentia, faucem calcaris obtegentia, oblique trianguli,

falcatuli, obtusi, apice dentati, rigidi, carnosi, satis atropurpurei; lobus intermedius porrectus, apice incurvus, anguste oblongus, apicem versus angustatus obtusus dentatusque, satis atropurpureus, explanatus c. 0.65 cm longus, basi 0.3 cm latus; calcar incurvum, conicum, obtusum, satis atropurpureum, inferne pallidum, fauce callo dentato ad basin lobi intermedii et callo conspicuo transverso basi lateribusque adnato e pariete postico omnino clausum. *Gynostemium* breve, crassum, latum, obtusissimum, album, apice purpureum, absque anthera c. 0.3 cm longum, clinandrio parvo concavo. *Anthera* conspicua, cucullata, ambitu quinquangulari-triangula, e basi lata late retusa triangulo-producta, obtusa, flavescenti-alba, c. 0.26 cm lata. Pollinia 2, suborbicularia, a dorso compressa, dorso transverse fissa, flava, cum stipite lineari albo et glandula conspicua suborbiculari alba c. 0.27 cm longa. *Rostellum* triangulum. *Stigma* parvulum, quadratum. Pes gynostemii versus ovarium recurvus, oblongus, truncatus, canalicula alta bicostatus, carnosus, albus, c. 0.4 cm longus. *Ovarium* pedicellatum, purpureum, c. 2.2 cm longum.

HABITAT? (Cultivated in the garden of the late Mr. E. H. ANDRIESSE, Soember Telogo, Malang, Java, 1909).

Although this species is known to me for long years I did not publish it, hoping to get one day full materials.

In many respects it approaches *Ae. reversum* J. J. S. especially in the reflexed erect flowers and the dark purple colour. It differs, however, conspicuously in the shape of the lip, which is not blotched, and the strongly recurved column-foot. The inflexed side lobes recall to mind *Ae. inflexum* T. et B. but in other respects this is very different, e. g. in the colour und the straight column-foot.

The origin of the plant is unknown.

Description from a fresh inflorescence.

**Adenoncos vivax** J. J. S. n. sp.

*Caulis* patens, incurvus, ramosus, tenuiusculus, basi radicans, c. 9 cm longus, internodiis c. 0.4—0.6 cm longis. *Folia* patentissima, leviter recurvula, linearia, apice contracto-angustata et lateraliter compressa, acuta, longe apiculata, obtusangule canaliculata cum lateribus convexis, deinde alte acutangule canaliculata, subtus valde convexa, supra et etiam subtus ad marginem transversa rugulosa, rigida, carnosa, utrinque nitide viridia, c. 1.85—2.75 cm longa, 0.27—0.3 cm lata; vaginae tubulosae, teretes, transverse verruculoso-rugosae, internodia aequantes, ad c. 0.2 cm diam. *Inflorescentiae* vaginam dorso ad apicem perforantes, ad 3 superimpositae, patentes, brevissimae, 1florae, pedunculo abbreviato, nonnullis vaginulis brevibus tubulosis truncatis donato. *Flos* diu viriditatem conservans, carnosulus, c. 0.7 cm diam., sordide mellinus, sepalis petalisque patentissimis basi pallide viridibus. *Sepalum dorsale* cum ovario angulum obtusum faciens, oblongum, apice breviter angustatum, obtusum, dorso ad apicem callo parvo instructum,

1nervium, 0.36 longum, c. 0.17 cm latum. *Sepala lateralia* divaricata, leviter incurvula, oblique oblonga, subfalcatula, obtusa, apiculo parvo conico dorso ad apicem, margine postico superne leviter erosula, 1nervia, c. 0.4 cm longa, 0.175 cm lata. *Petala* divergentia, oblique oblonga, obtusa, plus minusve apiculata, apice irregulariter marginata, 1nervia, c. 0.3 cm longa, bene 0.1 cm lata. *Labellum* porrectum, apice incurvum, concavum, subtus valde convexum, manifeste 3lobum, supra visum ambitu cuneatum, carnosum, 3nervium, nervis exterioribus ramosis, costa longitudinali satis conspicua lineari obtusa farinosa albida inter lobos laterales medium labelli attingente, inexplanatum c. 0.525 cm longum, hypochylio 0.3 cm longo, 0.375 cm lato; lobi laterales satis conspicui, erecti, obtusangule trianguli, cum lobo intermedio angulos fere rectos facientes; lobus intermedius transverse oblongus, angulis utrinque rotundatus, apice lato medio leviter rotundato-triangulo-productus, subtus infra apicem breviter gibbosus, supra medio leviter canaliculato-concavus cum lateribus convexis, subtus convexus, c. 0.25 cm longus, 0.475 cm latus. *Gynostemium* brevissimum, crassum, pallide viride, fere 0.2 cm longum, clinandrio obverse reniformi concavo cum costula longitudinali, apice brevissime triangulo, auriculis minute dentiformibus. *Anthera* cucullata, transversa, abrupte in rostrum triangulum obtusum subtus concavum producta, c. 0.18 cm lata. Pollinia 2, globosa, caudiculis tenuissimis stipite anguste oblongo curvato antice convexo inserta, cum glandula oblonga postice truncata supra convexa fere 0.2 cm longa. *Rostellum* recurvum, malleiforme, postice obtusum et vix retusum, antice in dentes 2 porrectos verticales parallelos triangulos partitum. *Stigma* orbiculare, concavum. *Ovarium* crassiusculum, teres, 6sulcatum, c. 0.4 cm longum.

SUMATRA: Bengkoeloe, Lebong Tandai (C. J. BROOKS, liv. pl. cult. in Hort. Bog. sub n. 29).

Approaching *A. elongata* J. J. S. but with much shorter stems, shorter internodes, smaller leaves, one-flowered inflorescences, blunt sepals, a very concave lip with the side-lobes much more conspicuous, the midlobe shorter and much more obtuse, and the keel much narrower and longer.

Description from a living plant.

**Luisia unguiculata** J. J. S. n. sp.

*Caulis* validus, teres, internodiis c. 1.5—2.2 cm longis. *Folia* spiraliter disposita, teretia, c. 9—10 cm longa, semimacerata oblique obtuse apiculata, 0.37 cm diam.; vaginae tubulosae, internodia paulum superantes. *Inflorescentiae* 2 vaginas perforantes, breves, dense pluriflorae, pedunculo brevissimo, nonnullis vaginulis brevibus tubulosis donato, cum rachide ad c. 17 cm longo, 0.3 cm diam. Bracteae patentes, triangulae, obtusae, concavae, crassae, dorso c. 0.225 cm longae. *Flores* c. 10, valde incurvi, carnosi, c. 0.85 cm lati. *Sepalum dorsale* ovarii apice continuum, ovato-triangulum, obtusum, basi latum, marginibus versus apicem incurvis, concavum, 5nervium, c. 0.525 cm longum, 0.37 cm latum. *Sepala lateralia* divergentia, angulum

acutum facientia, oblique oblonga, obtusa, margine postico incurva, concava, dorso conspicue valde oblique carinata, carina ultra apicem triangulo-producta, margine superne irregulari, 6nervia, c. 0.66 cm longa, 0.3 cm lata. *Petala* in utraque parte sepali dorsalis porrecta, horizontalia, divergentia, anguste oblique oblonga, vix falcatula, apice paululum dilatata, obtusa, dorso praesertim versus apicem leviter convexa, 3nervia, c. 0.83 cm longa, apice 0.3 cm, medio 0.26 cm lata. *Labellum* ovario parallelum, crasse carnosum, 3lobum, totum c. 0.7 cm longum; hypochylium conspicuum, longum, unguiculiforme, quadrangulum, basi in lobos laterales erectos oblique semiorbiculares auriculiformes dilatatum, convexum, basi leviter concavum, dorso convexum, antice sulco conspicuo transverso leviter rotundato a lobo intermedio separatum, explanatum c. 0.35 cm longum, ad lobos laterales c. 0.45 cm, apice fere 0.3 cm latum; lobus intermedius abbreviato-ovato-reniformis, valde convexus cum sulcis c. 7 longitudinalibus tenuibus, c. 0.35 cm longus, 0.525 cm latus. *Gynostemium* breve, crassum, superne leviter incrassatum, dorso convexum, apice producto obtuso, absque anthera c. 0.3 cm longum, clinandrio conspicuo, triangulo, leviter concavo cum costula longitudinali. *Rostellum* alte bipartitum, laciniis dentiformibus triangulis sinu lato separatis. *Stigma* magnum, faciem inferiorem gynostemii fere totum occupans, obverse triangulum. *Ovarium* pedicellatum satis crassum, apice incurvum, obtuse trigonum, 6sulcatum, c. 0.87 cm longum.

TIMOR: In the centre (W. GROENEVELDT n. 21, liv. pl., cult. in Hort. Bog., imported 1924).

This species is well characterized by the rather long and narrow hypochylium with two short rounded erect side-lobes at the base, and the much broader convex grooved midlobe.

„Stem 60—70 cm long; sepals yellowish green, with green midrib, petals very light green, with yellowish tips, lip very dark violet, column yellowish green, lower margin of stigma dark violet, pollinia yellow." (J. G. B. BEUMÉE)

Description from herbarium and flowers preserved in alcohol.

**Vanda saxatilis** J. J. S. n. sp. — *V. crassiloba* T. et B. (non J. J. S.) in Cat. Hort. Bog. (1866), 48, nom. nud. — *V.* sp. J. J. S. in MERR. Interpret. RUMPH. Herb. Amb. (1917), 178. — *Angraecum saxatile* RUMPH. Herb. Amb. VI, 107, t. 49, fig. 1.

*Caulis* validus, teres, parte foliata ad c. 32 cm longa, internodiis c. 1.3—1.5 cm longis, radicibus crassis, rigidis. *Folia* patentia, apicem versus angustata, inaequaliter biloba, lobis triangulis acutis vel anguste obtusis interdum vix denticulatis, dorso carinata, coriacea, ad c. 22.5 cm longa, in sicco 1.9—2 cm lata. *Inflorescentiae* axillares, erectae, satis validae, laxe pluriflorae, foliis breviores, pedunculo c. 3—3.5 cm longo, nonnullis vaginulis brevibus tubulosis donato, rachide c. 8.5—12.25 cm longa. Bracteae quaquaversae, adpressae, breves, triangulae, c. 0.35 cm longae. *Flores* c. 7—13,

mediocres, carnosuli, c. 3.7—4.2 cm lati, sepalis petalisque patentissimis, dilute virescenti-flavis ad flavidis, margine lato excepto superne confluenter cinnamomee vel olivaceo-cinnamomee maculatis, dorso flavescenti-albis ad virescenti-flavescentibus. *Sepalum dorsale* incurvulum, marginibus inferne recurvulis, subspathulatum, convexum, explanatum subobovato-oblongum, rotundatum, c. 2.1—2.2 cm longum, 0.825—1.1 cm latum. *Sepala lateralia* oblique subspathulata, marginibus superne incurvulis, apice oblique rotundata, dorso carinata, c. 2—2.1 cm longa, lamina oblique ovata, c. 1.3 cm longa, 1—1.25 cm lata. *Petala* apice incurvula, subspathulata, obtusissima, basi angustata, laxe et parce undulata, c. 2.2—2.4 cm longa, 0.75—1 cm lata, lamina oblique oblonga. *Labellum* gynostemio parallelum, 3lobum, calcaratum, basi ad faucem calcaris leviter puberulo-pulvinatum cum sulco longitudinali, totum c. 1.4—1.5 cm longum; lobi laterales porrecti, paralleli, trapeziformes, apice obtusi, concavi, albi ad flavescentes, intus ad basin aureo-punctati, gynostemium aequantes, lobus intermedius porrectus, hastatus, crasse carnosus, c. 0.8—0.9 cm longus, ad lobulos basilares 0.85—0.875 cm latus, lobulis basilaribus patentissimis, anguste triangulis, acutis, patentissime pubescentibus, albis, lobulo intermedio porrecto, subrecto vel incurvulo, ovali- ad subrhombeo-oblongo, obtuso, retuso, subtus basi et interdum etiam plus minusve supra basin excavato plusminusve X-formiter bicostato (marginibus recurvo), supra valde convexo, costulis 3 longitudinalibus parallelis apice excepto striis cinnamomeis separatis donato, nitido, supra inferne opaco albo superne interdum cinnamomeo-punctato, subtus cinnamomee suffuso; calcar reversum, conicum, a latere compressum, anguste obtusum, cinnamomeum, nitidum, intus pubescens, c. 0.525—0.55 cm longum. *Gynostemium* rectum, leviter clavatum, basi vix dilatatum, cinnamomeum, apicem versus flavum, opacum, c. 0.73 cm longum, clinandrio leviter concavo. *Anthera* plano-cucullata, late ovato-orbicularis, obtusa, flavescens, c. 0.3 cm longa. Pollinia 2, oblique ovalia, a dorso compressa, alte fissa, flava, cum stipite lato albo et glandula magna c. 0.3 cm longa. *Stigma* alte excavatum, transverse quadrangulum. *Ovarium* angulatum, 6sulcatum, cum pedicello tereti albidum, c. 3.8—5.5 cm longum.

AMBON: (RUMPHIUS; also cultivated in the private garden of G. KOCH, Buitenzorg, April 1910).

BOEROE: South coast, Oki, on rocks (J. E. TEYSMANN, February 1860). Leksoela, on a tree on the beach (L. J. TOXOPEUS n. 2, 9 February 1921). Same locality, on a rock, 10 m (L. J. TOXOPEUS n. 16, 17 February 1921). Without locality (Cult. in Hort. J. C. DAMMERBOER, Buitenzorg, April 1920).

SERAN: Kali Pohon Lima, 0 m, abundantly (L. RUTTEN n. 199, leg. KORNASI 5 October 1917). In the south-eastern part, 0 m, in a garden near the beach (L. RUTTEN n. 851, leg. KORNASI 19 January 1918, nom. ind. „loesimoe apoedin"). In the western part, Poeloe Tiboes, 0 m, strandvegetation (L. RUTTEN n. 1269, leg, KORNASI 9 May 1918).

Closely allied to *V. celebica* ROLFE from Selebes, which differs in the colouring of the flowers, abruptly incurved apex of the lip provided with two thick tumours, glabrous basal teeth of the midlobe and broader glandula. Both species should be compared with *V. hastifera* RCHB. F. and a few others described inadequately by REICHENBACH.

Description from fresh flowers, the leaves from dried specimens.

**Arachnis breviscapa** J. J. S. in Nat. Tijdschr. Ned. Ind. LXXII (1912), 4. — *Arachnanthe breviscapa* J. J. S. in Bull. Dép. Agric. Ind. néerl. XXII (1909), 48. — *Vandopsis breviscapa* SCHLTR. in FEDDE Rep. X (1911), 196.

Shortly after publishing this species Mr. H. N. RIDLEY wrote me that the sprays of the plant are as large as those of *A. Maingayi* SCHLTR., some 2—3 feet long, my specific name thus being ill-adapted. Since, however, I received photo's of the plant from Mr. C. J. BROOKS, who found a single specimen of the species in Sarawak and transplanted it to his garden where it blossomed freely. On these photo's the plant is represented with a very short inflorescence bearing two flowers. At my request Mr. BROOKS kindly informed me that it always produced very short spikes which never bear more than 2 or 3 flowers just as I described it. Apparently Mr. RIDLEY has had in view another species.

**Malleola ligulata** J. J. S. in Fl. Buit. VI. Orch. Atlas Fig. CDLXXV (1914); in Bull. Jard. Bot. Buit. 2 me sér. (1914), 51. — *Saccolabium Witteanum* RCHB. F. var. *ligulatum* J. J. S. in Fl. Buit. VI. Orch. (1905) 640.

var. **baliensis** J. J. S. n. var.

Differt a forma typica sepalis petalisque dilute flavis dilute cinnamomeo-maculatis, calcari angustiore.

BALI: Without locality (Exp. R. MAIER 1918, SARIP n. 230 p. p., liv. pl. cult. in Hort. Bog.).

I have only seen one living specimen both of the type and the variety, so that it can not be said whether the colour is a constant character or not.

**Taeniophyllum** (sect. Loboglossum) **amboinense** J. J. S. n. sp.

*Caulis* abbreviatus, squamis subulato-acuminatis mox exarescentibus tectus, radicibus numerosis, elongatis, linearibus, applanatis, cinereo-viridibus, ad c. 13 cm longis, 0.23 cm latis. *Inflorescentiae* numerosae patentes, diu flores gignentes, multiflorae, pedunculo capillari ochraceo-viridi, c. 2.6 cm longo, basi nonnullis medio vaginulis brevibus tubulosis apiculo patente lateraliter compresso terminatis bene 0.05 cm longis donato, rachide paulo crassiore, flexuosa, glabra, colore pedunculi, c. 0.45—0.6 cm vel plus longa, cum bracteis bene 0.1—0.125 cm lata, internodiis c. 0.025 cm longis. Bracteae alternatim bifariae, patentissimae, rachidem fere amplectentes, triangulae, concavae, apice lateraliter compressae, subacutae, colore pedunculi, dorso c. 0.05 cm longae. *Flores* parvi, flavescentes, c. 0.43 cm lati, sepalis

petalisque patentissimis, recurvulis. *Sepalum* dorsale obverse oblongo-lanceolatum, acutum, leviter convexum, superne leviter concavum, 3nervium, c. 0.275 cm longum, fere 0.1 cm latum. *Sepala lateralia* olique obverse oblongo-lanceolata, vix falcatula, acuta, leviter concava, 3nervia, c. 0.25 cm longa, fere 0.1 cm lata. *Petala* oblique oblongo-lanceolata, obtusa, 3nervia, c. 0.25 cm longa, 0.1 cm lata. *Labellum* 3lobum, calcaratum, totum c. 0.33 cm longum; lamina concava, subtus inter lobos laterales convexa, 5nervia nervis exterioribus furcatis, explanata ambitu ovata, c. 0.225 cm longa, usque ad apicem loborum lateralium 0.15 cm metiens, 0.2 cm lata; lobi laterales erecti, leviter concavi, basi lati subsemiorbiculares, antice vix producti obtusissimi, hypochylium transverse ovale formantes; lobus intermedius recurvulus, ambitu sexangulatus, utroque latere in lobulum brevem rotundatum dilatatus, apice bilobulus, lobulis incurvulis obtusisque, medio incrassatus, fere 0.1 cm longus et latus; calcar reversum, ovario subparallelum, inconspicue incurvulum, subclavatum, c. 0.13 cm longum. *Gynostemium* brevissimum, dorso convexum, fere 0.1 cm longum, clinandrio cupuliformi lobis stigmaticis brevibus obtusissimis cupuliformibus deorsum spectantibus. *Anthera* cucullata, transverse quadrangula, leviter quadrilobulata, in rostrum longiusculum sublineare apice recurvum obtusum contracta, c. 0.03 cm lata. Pollinia 4, oblique obovoidea, curvata, stipite tenuissimo spathulato, glandula oblonga. *Rostellum* lobis stigmaticis brevius, bidentatum. *Ovarium* 6sulcatum, muricibus papilliformibus brevissimis in sulcis, fere 0.1 cm longum; pedicellus c. 0.25 cm longus.

AMBON: (Hj. JENSEN, 1922. liv. pl. cult. in Hort. Bog. sub n. 74).

In the section *Loboglossum* this is aberrant in the muriculate ovary. It seems to approach *T. ficicola* SCHLTR. from Selebes but differs moreover in the shorter spur, the midlobe being sexangular in outline, the quadrangular somewhat quadrilobulate anther with a rather long rostrum, and the very thin spathulate stipes.

Description from living plants and inflorescences preserved in alcohol.

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